

The Computer PAPER

Canada's Computer Information Source

GREATER TORONTO EDITION APRIL 28, 2006 VOLUME 18 NUMBER 14

DIGITAL VIDEO

TOOLS FOR EDITING AND SHARING
YOUR VIDEO CREATIONS

test
Lab:

HIGH-SPEED WIRELESS
DATA CONNECTIONS



Hands on
Dell's Axim X5



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Lab Test: Digital Audio

Ad booking deadline: Tuesday, April 25
Subscription begins: Wednesday, April 2

June 2003

Cover Story: Computing on the Go
Lab Test: Flat-Panel, Plasma Displays

Ad booking deadline: Wednesday, April 23
Subscription begins: Wednesday, May 7

July 2003

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Lab Test: Multi-Function Devices

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Response time	2R	2R	2R	2R	2R	2R	2R	2R	2R
Contrast ratio	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1
Viewing angle	178°	178°	178°	178°	178°	178°	178°	178°	178°
Features	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™
Price	\$199	\$199	\$199	\$199	\$199	\$199	\$199	\$199	\$199
17" LCDs (1280 x 1024 matrix resolutions)									
Lightest and thinnest	VE170	VE170	VE170	VE170	VE170	VE170	VE170	VE170	VE170
Lightest and thinnest	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)
Response time	2R	2R	2R	2R	2R	2R	2R	2R	2R
Contrast ratio	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1
Viewing angle	178°	178°	178°	178°	178°	178°	178°	178°	178°
Features	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™
Price	\$249	\$249	\$249	\$249	\$249	\$249	\$249	\$249	\$249
17" LCDs (1280 x 1024 matrix resolutions)									
Lightest and thinnest	VE176	VE176	VE176	VE176	VE176	VE176	VE176	VE176	VE176
Lightest and thinnest	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)
Response time	2R	2R	2R	2R	2R	2R	2R	2R	2R
Contrast ratio	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1
Viewing angle	178°	178°	178°	178°	178°	178°	178°	178°	178°
Features	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™
Price	\$299	\$299	\$299	\$299	\$299	\$299	\$299	\$299	\$299
17" LCDs (1280 x 1024 matrix resolutions)									
Lightest and thinnest	VE178	VE178	VE178	VE178	VE178	VE178	VE178	VE178	VE178
Lightest and thinnest	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)
Response time	2R	2R	2R	2R	2R	2R	2R	2R	2R
Contrast ratio	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1
Viewing angle	178°	178°	178°	178°	178°	178°	178°	178°	178°
Features	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™
Price	\$349	\$349	\$349	\$349	\$349	\$349	\$349	\$349	\$349
Large Format LCDs (1280 x 1024 matrix resolutions)									
Lightest and thinnest	VE180	VE180	VE180	VE180	VE180	VE180	VE180	VE180	VE180
Lightest and thinnest	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)
Response time	2R	2R	2R	2R	2R	2R	2R	2R	2R
Contrast ratio	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1
Viewing angle	178°	178°	178°	178°	178°	178°	178°	178°	178°
Features	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™	SuperClear Anti™
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*Source: For each display manufacturer in the Consumer Electronics & Entertainment Channel by Display Size (15" to 24")
*Highest Rating in the 15" to 24" size category for each manufacturer. Specifications listed in this chart are for the
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Access to information

This article ("Web accessibility hits the mainstream" ZD February) was excellent and I'm familiar with a few assistive tech-



nology devices that are accessible to persons with disabilities and this equals the playing field when looking for self-employment or employment. I work at the Disability Resource Centre in Durban, K.C. as a career counsellor. This

type of information is very useful and I would like more information on computerized adaptive technology for persons with disabilities. Is there a user-friendly magazine/book that promotes good software and computer devices that you are aware of in Canada or the U.S.? This would be very useful for reference material and a good learning tool to assist clients with.

Sincerely, Mark Hupai

Jeff Moore replies: While there are currently few (if any) magazines focused solely on accessibility, there is a wealth of information available in books. An excellent resource outlining accessible computer tech-

nologies for disabled users is *Computer and Web Resources for People with Disabilities*, by Alliance for Technology Access (ISBN 0897933002). This book provides information and resource references on making use of conventional and assistive technologies including state-of-the-art computer technology. For further details on how to make your Web site accessible, a great starting point is *Accessing Accessibility: Making Your Web Site More Usable for Everyone* by John Stoen and Steven Koch (ISBN 0201774624).

CD-R capacity allies and growing

[Senior Product Review Editor, Sean Connolly] made a little mistake when he declared that the Zip drive's 750 MB capacity exceeds that of the largest CDs by 50 MB in his March 2001 issue ("Zip drive alive and well"). The largest CDs are not 740 MB as Sean implies, but (have been for a while) at least 800 MB, or 80 minutes. That takes away one of the Zip drive's few major selling points, I'm afraid. Keep up the good work on the rest of ZD, though. :)

Andrew Krugovcev

Sean Connolly replies: Thanks for the note. The Zip article was actually held back from a previous issue, and unfortunately

that wasn't updated. Oops! Actually, there's already 870 MB CD-R media available, good for 89 minutes. The bad news is that anything beyond 700 MB may not be compatible with all CD burners (including some of the major brands) or component CD audio players, for that matter.

 Inkjet economics

You recent computer printer review, like others I have seen, misses a most important point: Is the printer cartridge refillable, and how many times can the cartridges be refilled before collapsing? As anyone who does significant computer printing — can attest, over the printer's lifespan, the user will pay more for ink than the original cost of the printer. And multiple refillability of cartridges is the key to economical computer printing.

Best regards, Len Harrison

Sean Connolly replies: Thanks for the note. The issue of refilling is a bit contentious, as you might imagine. None of the major manufacturers recommends refilling your cartridges — of course they would, you might say, since they make money from cartridge sales. There are a number of key reasons why you may not want to refill your cartridges, however:

- The manufacturers have often formulated

the ink specifically to work with their paper and with their printing process; by using ink that may not be specific to that printer, your results will almost certainly be substandard when compared to the manufacturer's original cartridge.

- With new inkjet cartridges, the resolution is very fine and nozzles are microscopic. Ink that isn't specifically designed to flow through those nozzles may cause clogging or not spray properly, again resulting in substandard printing.
- You mention "compatibility" and that's one of the key problems with the issue of refilling: most cartridges aren't meant to be pried apart and refilled. Once it's open for refilling, the chances of it leaking are greatly increased, which not only poses a threat to your printed output, it could damage the printer itself. It's worth pointing out that while using a refilled cartridge in and of itself doesn't void your warranty, if a refilled cartridge is determined to be the cause of printer damage, the manufacturer has every right to not honor the warranty.

Unfortunately, for these exact reasons are planning to print a lot of test documents, the best solution to the issue of cost per page (i.e. the same one it's been all along) switching to a monochrome laser printer. ☐

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WHAT'S NEW

By TOP STORY



Office furniture manufacturers never saw it coming: new pen-based computers running Windows XP Tablet PC Edition are marketed as the perfect tool for "corridor warriors" or "gig-and-go professionals," by keeping them running rather than tied to a desk. NEC's new VersaLike Pad is the latest incarnation,

and at its advertised 1 kg (2.2 lb.) isn't much heavier than a book.

The VersaLike Pad measures 28.7x15 cm (11.3x5.9 in.) and offers a 10.4-inch wide-angle display. It's equipped with a 933 MHz Intel® Ultra-Low Voltage Mobile Pentium III Processor and 256 MB RAM, as well as 802.11a and 802.11b wireless LAN capability. Bundled software includes AlogiWarefront, Sketchbook Pro, Corel® Graphics Personal Edition, Corel® Graphics, Photo & Video, Adobe® Photoshop® CS, Microsoft Office XP Service Pack 2 for Tablet PC.

For those who do have a desk, the unit comes with a USB keyboard and mouse. Pricing starts at US\$2,399, and of course that doesn't include a desk. It even runs shoes.

Freedom Scientific (www.freedomsonline.com) and Candori's own Freedom Computing (www.freedomcomputing.com) have announced the PAC Mate handheld computer, which they claim is the "world's first and only accessible Pocket PC." The PAC Mate is designed to allow the visually impaired to interact more easily with the Pocket PC handheld computing platform in a couple of key ways. The "display" on the PAC Mate is actually provided by speech synthesis. Instead of displaying on a screen, the handheld will talk what would usually appear on the screen and read it out loud, either via the built-in speaker or through a headset.

The PAC Mate does pretty much anything any other Pocket PC machine will do including synchronizing with a PC (via serial or USB), accepting CompactFlash and even PC Card devices like memory cards and modems.

At the time of launch the PAC Mate was available with an eight-dot Braille keyboard, and a QWERTY-keyboard version was expected to follow. A version with Braille output is currently in the works, and may be available before the end of the year. Because it's so specialized, the PAC Mate comes at a premium: the unit will initially cost \$1,900, and because they are so new, they may not be eligible for government assistance until they've been on the market for at least one year.

Spotlight



Watching spring blossoms with falling leaves, watching things melt away every year at season's end is a natural matter of time before autumn's end, the conclusion of the year's first and lastness, the autumn of time. Siemens, at stepped up to the challenge, introducing a new line of phones under the Xelibri brand name, that will be marketed as fashion accessories through department stores and fashion retailers. The new product line reflects the year's end for spring/summer and autumn/winter. The hopes that those who simply need the latest technology will also stay up the latest fashion, drop-in, or even keep some of a line to make an off-the-cuff occasion or with different outfits.

The company says the phones will come in several stages and designs and focus on a few appealing features of fancy functions, offering simple voice functionality. They will be available only in select quantities and only for \$200.

Early, Canada didn't seem to be in the mix of the line. The makers of these phones, The First Collective will be sold out in April in the U.K., France, Hong Kong, France, Germany, Italy, Singapore, and Spain. More markets are expected to be added soon, for the fall collection.

Spotlight

Print on the go

Hewlett-Packard (www.hp.com/go/photobooks) and Nokia (www.nokia.com) are developing a Bluetooth printing application for Nokia Series 60 phones, that the companies say will allow users to print, scan, and print. The application is still in development at HP, but the company hopes to enable users of Series 60 phones to send photos, multimedia messages (MMS), messages with images, email, short message service (SMS) messages, contact files, contacts, and calendar items from their phones to HP Bluetooth-enabled printers. Nokia's Series 60 phones include the 6050 and 6060 models, along with imaging phones that have integrated cameras and are featured and Bluetooth-enabled. Currently, both allow the user to receive pictures, text and voice clips that can be sent by MMS or email to a phone or PC. The 6050 has the added feature of video capture and playback.



Those who don't like to sit still are the apple of the tech industry eye today, with developers betting their on-the-move philosophy makes them more willing and able to pay for gadgets they can take with them. Panasonic (www.panasonic.com) is no exception, and has introduced a new 696 G (2.2-in.) notebook with a 10.4-inch screen and optional wireless capabilities.



The 696 G measures up at 24x35.3 cm and a thickness of 2.35 cm at the back and 3.72 cm at the front. Its case is magnesium alloy and the hard drive is shock-dampened to protect it from drops,

according to Panasonic. It comes as just M14 Intel® Pentium® III Processor 400 and 256 MB SDRAM. With a three-year warranty, the suggested retail price is \$2,875. □

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Digital video editing for the masses!

A look at two budget editing packages for beginner directors

By Ewan Townsend

I've said it in three pages before, and it's still true with a digital video (DV) camera, a computer, and the right software, you can make a video or DVD with all the editing trappings of a Hollywood production.

Pinnacle Studio 8
Non-Track Edition, www.pinnacle.com
For Windows 98/Me/2000/XP
Street price: \$225

Ulead VideoStudio 7
Title, Effect, Splicer, and more
For Windows 98/Me/2000/XP
Street price: \$225

But if you're one of the many people who doesn't need to make Hollywood productions, why pay Hollywood prices? I looked at two under-\$250 packages that claim to keep things simple.

Ulead's VideoStudio 7 and Pinnacle's Studio 8 both promise to make video editing fun, and allow you to drag and drop clips from your DV camera or hard drive onto a single storyboard or timeline, add transition effects and audio, then output your masterpiece to your medium of choice.

The interfaces of both programs have the same basic elements, like many video editors: a preview window, an area where you can see your library of video and audio clips, and a work area at the bottom where you can see how your clips are arranged. The work area (or either be a storyboard mode [your work is represented in a strip with



thumbnails of each clip in sequence) or timeline (you see the layers of your work as concurrently running video and audio tracks, each clip in a rectangular area that spans its running time).

Both programs sweetly start off in storyboard mode, which is easier for beginners to understand, but make it easy to switch to and from the timeline for more advanced operations.

Both programs also sport a feature I've never been fond of: menu bars or headings that promote a certain approach to working—capture footage, edit, add effects, overlays, titles and audio, save or burn your video. This isn't uncommon in consumer-level editing

software, but I have to wonder why interface designers keep doing this when they know the software is going to (inevitably) drop users right into the editing stage when the program starts, rather than in the "first" step, capture. Besides, isn't the whole point of using editing software that you can jump around and add or change elements as you require?

Purpose notwithstanding, the interfaces were clear enough that I could get right to work. I started with VideoStudio 7, dragging the thumbnail of my original clip and dropping it onto the storyboard. Then I used the sliders on the preview window to select the exact start and end frames for the first part of my

one-minute test video—a movie trailer using footage from a two-hour DVD file. When I dropped a second thumbnail onto the storyboard, I got a surprise: the program automatically inserted a dissolve transition between the two. I soon realized that by default, VideoStudio 7 inserts a random transition effect whenever you add a new clip, no doubt in an effort to make things interesting for beginners. I cringed at the thought of one of almost 200 random transitions being inserted between each clip without any thought to aesthetics, and I immediately went into the preferences and turned this questionable feature off.

Beyond that, the experience was remarkably straightforward, and quite friendly for people new to the world of video editing. I easily built my video step by step, adding a clip, then it with the sliders, move on to the next. New clips could easily be inserted by dropping them between two thumbnails. Deleting a clip was a matter of clicking its thumbnail and pressing Delete. At every step, available options were all presented clearly to the left of the preview area.

When I was done, I had the option of creating a video file in one of six formats (with plenty of compression, streaming and resolution options), outputting to videotape or burning my masterpiece to Video CD, Super Video CD, or DVD. Like other Ulead products, the burning option provides menu creation capabilities and preview options.

VideoStudio 7 does have a few blots.

Continued on page 21



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And for the masses with Macs...

Tips and tools for making movies on the digital video-friendly platform

By Justin Gorman

When you're getting into digital video-capturing, be it on the Mac or Windows platforms, the first thing you need to consider is your source. Any digital video camcorder on the market today that uses the miniDV standard will include a FireWire port (also known as iLink or IEEE 1394). If you're using a Mac, you do need to beware of some new video cameras, mostly by Sony that use a microDV format. It's not true DV and thus will not work at all on the Mac, but the cameras look so similar it's a good idea to check the packaging for the miniDV logo before purchasing.

In conjunction with a **miniDV** camcorder, any Mac currently available or sold in the last two years will include built-in FireWire, so if you're dealing with camcorders and computers made in the last couple of years, there should

be no problems. If you have an older G3 or G4 upgraded Mac, the easiest solution is simply to add a FireWire card, which requires just one free PCI slot and can be purchased for around \$200.

If you have an iMac without FireWire, there's really no alternative but to upgrade to a newer model, which works out OK since a non-FireWire iMac has neither the CPU speed nor the hard disk space for video editing. It's worth noting that even iMacs with built-in FireWire, such as the iMac DV, may find working with digital video to be very slow. Adding RAM and a fast 7,200 rpm hard disk will help, but you really need a G4 processor to get decent speed in most editing software.

If you have an older camera, say a Hi8 or Compact VHS model, there are now products available to import that footage into your digital video system. Perhaps the most popular is the Formac (www.formac.com) Studio DVX, essentially an



analogue video-to-FireWire bridge. It works seamlessly with iMovie and Final Cut Express, although the camera can't

he controlled from the blue when going through the bridge.

Continued on page 2.

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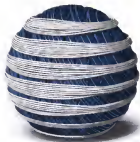
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Digital video editing for the masses!

Continued from page 12.

fers. The transitions are grouped into different categories, but by selecting the right one when all of them are demonstrated simultaneously, I was spinning so hard at it that I was trying to read the lettering on a light bulb that was turned on. And once a transition is selected an icon is placed in the storyboard—but the icons can be ambiguous, and there's no way to see the transition name unless you switch the timeline view and zoom in. Finally, one outright bug: VideoStudio 7 kept losing markers and mark-out points on some clips, which meant I wasted time repeatedly double-checking them.

Before I talk about Studio 8, I should mention at the outset that I liked it overall. Really, I did. We just got off on the wrong foot when it came to importing video files, starting with some detection

If you're unfamiliar with the term, some detection is a fairly standard feature that breaks up a large video clip into many smaller fragments by looking at where the image changes suddenly—that is, where a cut most likely implies a scene change. Of course, this adds some extra time when you're loading a clip from the hard drive, depending on the length of the clip.

Did I mention that my original video file was two hours long? How about the many quick cuts in my test footage,

which resulted in over 600 individual scenes, each one meticulously without a thumbnail? (To be fair, subsequent tests with other video files did generate thumbnails properly.) And why oh why does Studio 8 import every video file in a selected directory, obliterating any other imported files from the album?

Once I got past that, I was able to enjoy much of everything else Studio 8 had to offer. I was happy to discover I could rename individual scenes with more memorable titles. "Schade conversation" works much better than "Scene 26," when you think about it.

Studio 8's storyboard/timeline area takes up about half the screen, which gives the timeline plenty of breathing room but gives the storyboard far too much room on more modest projects. Otherwise, space is used fairly well, the screen that displays your library of clips (albums, in Studio 8 parlance) is tidied so you can flip between video, audio, still images and functions like linking and transitions. When you decide to cut the audio or video of a clip, a control panel pops up, obscuring the non-unnecessary album area and leaving the preview screen available so you can see what you're doing.

I should mention that, in addition to the storyboard and timeline, there's a third mode: the edit list. This is a text listing of where each cut starts and stops,

along with notes denoting transitions and changes to video or audio. It's too bad you can't print the edit list; it would make a nice backup tool.

Studio 8's audio tools do far better than VideoStudio 7's in some areas, but stumble in others. In VideoStudio 7, you can adjust the volume of each clip's original soundtrack independently, but the audio stays constant for each clip, aside from automatic fades at the beginning or end. Studio 8 provides control of the audio at any point in the soundtrack, even across several clips, through the timeline. However, the audio portion of the timeline is so small that fine control of volume levels is nearly impossible. Also, there's no one-click option for muting a selected clip.

In the end, I put together a video that was almost identical to the one I created in VideoStudio 7, and was again given plenty of options for creating a video file, going straight to video, or burning a disc. (In case you're wondering, the only format absent from Studio 8 but present in VideoStudio 7 is QuickTime.)

For all intents and purposes, the final product from both programs was virtually identical, which makes deciding on a few more all the harder. Studio 8 provided more options without significantly increasing complexity, but overall I felt more frustrated working with it than VideoStudio 7—with an important

caveat about speed.

I have to admit that my test computer, a 733 MHz Pentium III Windows XP system with 768 MB of RAM, is underpowered by current standards, but it's proven to be quite reliable and a reasonable performer for all kinds of video editing projects. I also considered it to be a realistic test system based on mainstream polling of other home computer owners who seem to be the target audience for this kind of editing software. As a result, I was taken aback by the difference in minimum CPU requirements: VideoStudio 7 requires an 800 MHz Pentium III, whereas Studio 8 is happy with 500 MHz.

When working with a large video file—I did mention mine was two hours long, right?—VideoStudio 7's delays were unbearably long. I experienced a few pauses in finding frames and previewing on Studio 8, but the wait was much shorter. Both packages cheerfully proclaim that they take advantage of the Pentium 4, though only VideoStudio 7 explicitly mentions hyperthreading and dual processors, and offers a real-time preview system if your processor is beefy enough. But if you're one of the many people who have decided not to bother upgrading in the last year or two, you may want to lean toward Studio 8. □
Tom Ichniowski (tom@ipchniowski.com) ought to be a pizza boy.

Recall offers easy entry

Continued from page 14

into his Media Studio Pro.

We found it very easy to get into the basic workflow, and the timeline provides a visual gauge of how the shots are coming together. The software will handle additional audio tracks (up to 99), which you can use for titles or other visual

effects. Likewise, the audio portion is divided into Aa and Ab, but you can use up to 99 separate audio tracks.

The audio editor is a separate application, but it is quite easy to use and has a decent number of features. We brought in a couple of music cuts from a record album (yes, the old-fashioned vinyl format) and were able to clean up the tracks

by applying a noise filter (not as good as a true scratch-and-pop filter designed specifically for cleaning up old vinyl), and a "normalizer" filter that maximizes the loudest sound then expends the other levels proportionately. You can save your WAV file at 32 bits, 44.1 kHz (CD standard), or 48 kHz (DV standard) sampling, in either mono or stereo. You can magnify the vis-

ual representation of the audio track, which makes it easier to mark precise points in the track.

Once you have your final creation, you can save it in DVD format on your hard drive and view it if you have DVD viewing software, or package it for recording to DVD or Video CD media, or record it back to your computer in DV format. □

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And for the masses with Mac...

Continued from page 18

The Studio DV includes both standard composite video and S-video inputs, so you simply find your camera into the Studio DV and it feeds the video into your Mac as if it were DV footage.

The resulting image will be a perfect digital copy of your analogue film, which is to say that while the Studio DV does not add any artifacts to the image, the quality will be limited to the quality of your source tape. It's also a great way to take old home movies off VHS and back them up to your computer to create VCD or DVD copies.

Once you have the converter interfacing with your computer you need to get the video into a program where it can be manipulated. At this point you'd likely be using iMovie 3 or Final Cut Express. iMovie 3 is fine for Mac OS X 10.2 users, and Final Cut Express also runs only under OS X 10.2, but it costs \$699.

We were hoping to have a review of Final Cut Express for this issue, but we were not able to get a review copy in time. Look for it in an upcoming issue.

What is the difference between iMovie and Final Cut Express? Basically, everything. Final Cut Express is actually Final Cut Pro with the High Definition support and Batch Capture mode removed. There are a few other changes like the removal of the offline RT format but otherwise Final Cut Express is Final Cut Pro 3 for about \$1,100 less.

The Final Cut interface is much more daunting to first time editors, although those who have used Avid systems will feel right at home. Final Cut Express features some nice improvements over iMovie, such as real-time transitions and effects, real-time colour correction, and multilayered layers of video with built-in blue screening capability.

If you're interested in video editing and want to get serious about it, Final Cut Express is a good way up from iMovie without having to shell out \$1,599 for full professional package. As long as you're working exclusively with DV footage, there's no need to step up to the full Final Cut Pro suite. A full list of the differences between Final Cut Express and Final Cut Pro, is available at www.apple.com/finalcut/.

iMovie 3 overview

iMovie was one of the first programs on

Continued on page 28

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— DIGITAL VIDEO —

QuickTime apps expand digital video format, delivery options

With LiveStage Pro (www.livepro.com) and eMedia QTV (www.emedia.com) are QuickTime authoring environments, which means they can be used to create multimedia projects using any file type QuickTime supports. You can use these programs to create lesson software, Web content, CD-ROM multimedia, or any other combination of video and graphics.

The eMedia QTV product is geared mostly toward Web content. When you save a project out of eMedia QTV it includes all the HTML files and resource files that go with it. This makes it extremely easy to post in the Web without additional coding; you can simply drag the QTV-generated HTML code into an existing page and it will work seamlessly.

When we last looked at an eMedia product it was eMedia MX 3.0, which is closer to LiveStage Pro in functionality, but which had no Web export functions, a big turn off for a multimedia authoring tool these days. eMedia QTV does the Web export functions with aplomb, but it doesn't have all the authoring options that eMedia MX does for non-Web content. It seems eMedia has decided to create two separate programs, one for Web content (QTV) and one for everything else (MX). The only downside to this strategy is that a customer wanting the most flexibility with their projects would need both programs.

LiveStage Pro 4 is capable of both Web and standalone development; it is one package, although it's considerably higher end than the eMedia products (the former is US\$500, while the latter is \$26 for QTV and \$149 for MX). LiveStage is definitely aimed at the Developer or Director crowd, while eMedia QTV is easy enough to be used for home projects, a perfect companion to iMovie 3.

More than merely a difference in price the LiveStage Pro interface is significantly more complex than the eMedia QTV layout. In fairness, the eMedia product is aimed at home and education use, while LiveStage is for full-fledged design use, think of LiveStage Pro as the QuickTime of multimedia.

LiveStage Pro 4 has undergone significant changes in the interface from the previous version, one of the most important modifications being the integration of the object stage and timeline into one

window making it easier to track both at once. It also features full support for QuickTime 6, with all the new features that entails. Including MPEG-4 and Flash support.

The intuitive interface in LiveStage Pro works very much like iMovie or Final Cut Pro. You can set in and out points in your media that can be linked to different actions or buttons. The program includes dozens of standard actions, and you can also write your own code using Scripter or AppleScript.

eMedia QTV works with any format that QuickTime will work with, which in QuickTime 6 includes Flash 5 and MPEG-4. The output format in eMedia QTV is a combination of QuickTime media and HTML, which means that it's both Windows and Mac compatible in any Web browser that can play QuickTime files. In the eMedia MX product there is a special eMedia player that needs to be installed before the project can be played. This makes eMedia QTV great for Web browsers, animated navigation, and streaming video, but it lacks some of the complexity that the eMedia player allowed.

Still, if you have a home movie that you want to put on your Web page, eMedia QTV will allow you to design a custom site around your movie and add additional controls and buttons that can link to other pictures, sounds and text. eMedia QTV is available for both Mac and Windows and retails for \$39.

Also of interest to iMovie users are a series of eMedia plug-in effects for iMovie, including a record address: eMedia iMovie for iMovie. It lets you overlay up to 10 layers of graphics and burn over your TV footage, allowing users to create elaborate animated sequences in existing iMovie projects.

LiveStage Professional 4.0

LiveStage Pro has undergone a few changes since we last look at version 3.0 back in 2001. The core functionality is the same, but improvements have been made to both the interface and the scripting capabilities.

One feature that will be a definite time saver is the new built-in hotspots. It consists of shortcuts for the most popular types of presentations. There are

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QuickTime apps expand digital video...

Continued from page 26

FastTracks included for different media controllers and skins, which means if all you want to do is add a movie to your site using a custom controller, you can use the FastTrack rather than spend the time creating all the item properties from scratch.



Also new in version 4.0 is full support for AppleScript under OS X, a feature not available in the Windows version. Using AppleScript, designers can record a set of commonly performed actions and save these as a script without having to write any code. The recorded scripts can then be saved and run in the future to scriptify large projects.

Also, because LiveStage Pro is designed with CD-ROM export in mind it supports a new QuickStart function. When you export a project to CD, the QuickStart engine will automatically be included in the CD. QuickStart is a standard QuickTime banner that will check to see if the user has the required QuickTime player and components and if not install them before running the presentation. This can all be set to happen automatically the first time the end user loads the CD to their computer. LiveStage Pro 4.0 costs \$990. An upgrade for users running LiveStage 3.0 is \$250. LJ

And for the masses with Macs...

Continued from page 25

or you can customise your own settings of format and codes to meet your needs.

Then QuickTime export function is extensible so that if you have, for example, Toast 5 Titanium, you will have an option called 'Toast Video CD export', which allows you to save the project out in MPEG-1 format. This MPEG-1 movie file can then be burnt in Toast to create a VCD that will play on almost any set-top DVD player, a perfect option for those without a SuperDrive. Of course once you have your footage edited and saved out in QuickTime format you can use it in all sorts of other projects using software such as iMovie, iEdit, iMovie MX, or iMovie Pro. LJ

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LEXMARK

Still/video camera hybrid a workable compromise

By David Denata

Digital still cameras can be used to capture video clips in a limited way and camcorders can take still photos in a limited way. With the new Hi803, Fujifilm is attempting to bridge that gap by offering no-compromise stills and movies. On overall assessment is that the Hi803 is a very nifty product, and takes the hybrid concept to another level. It is still a compromise solution; however, it's a compromise that many could probably live with.

This camera uses a 3.2-megapixel SuperCCD sensor that will create six megapixel still images and VGA-resolution (640x480 pixels) motion video at 30 frames per second. The amount of video is limited only by the size of your storage card. The camera supports two types of media: xD Picture cards, and Type I or II CompactFlash cards, including 1 GB microdrives (though a 1 GB microdrive, you would be able to record about 15 minutes [including audio] of video at the highest frame rate).

Ergonomics

It's 6.9x3.3x2.2 cm (2.5x1.3x.9 in.) and weighing 240 g (5.5 oz.). The Hi803 is pocket camera sized, which makes it positively tiny as a camcorder. It has an upright orientation (wider than video), with plastic bumps on the front and a contoured thumb grip on the back that allow a reasonably secure grasp with just

one hand. Indeed, the whole thing seems to be designed for single-handed operation: the shutter and zoom controls can be activated by your index finger as you grasp the body between your middle finger and thumb. While this may not result in the best still photos, the design lends itself to one-handed camcorder mode.

The front has no optical viewfinder, but a large portion of the back is devoted to a big and bright LCD viewscreen. An included flip-out screen shade can be attached to make the screen more viewable in bright light—a very nice touch. Also included is a pistol grip that screws into the tripod socket.

The 2X optical zoom lens is balanced to give some wide angle and some telephoto coverage (equivalent to 38 mm to 76 mm in 35 mm film camera terms). The camera also has a 4.4X digital zooming, which maintains good quality for video.

As a still camera

The still image quality is typical of what you would expect from a good-quality three-megapixel camera, easily making 10x10-inch prints on a halftone press. Most three-megapixel digital cameras come with at least a 3X optical zoom, so the 2X zoom on the Hi803 is less versatile. As well, it is primarily a point-and-shoot camera, with a limited manual mode that allows you to adjust exposure compensation, sensitivity (ISO), and white balance. In auto or manual mode you can also select from several image quality options,



Fujifilm Hi803
 Price: \$499 (suggested retail)
 Street price: \$349
 Pros: Good digital still and digital video output, 1.5 megapixel stills, easy to use, compact size.
 Cons: Zoom ratio for video on very-high and limited to about 1.5x zoom with current technology.

and there are dedicated buttons for flash and close-up mode.

As a camcorder

The shape and the audio are both quite decent. The camera's small size and weight makes it is easy to point during shooting, however. The camera has an A&out jack, and the connectors amongst the camera editors was that the playback on a TV set was at least Hi8 quality. We could see it as being a quite satisfactory way to look at written videos or other fairly events. The camera saves video files in

Motion JPEG format, and we found it pretty easy to move the files into the PC's hard drive, and edit and assemble them into a movie using iMovie video-editing software. The camera supports limited re-camera editing, where you can specify the start and end points of a video clip to within one second. The edited clip is saved as a new movie and the original is preserved.

The Hi803 is a hybrid product that does both stills and video quite well. The still camera, while not best of breed amongst three-megapixel units, is a very respectable point-and-shoot camera. The camcorder is harder to assess because there isn't much to compare it to. It isn't as good as a Hi8 camcorder, but better than what we've been used to getting as video capability on a still camera.

Storage is a limiting factor, both for capacity and cost. A 1 GB microdrive (which would be good for about 15 minutes of video at the highest quality) still costs \$400. Add that to the \$1,000 price tag of the camera and it's a serious chunk of change for most people.

In terms of video, you could probably buy a comparable three-megapixel camera and a better camcorder for the same or less money. Or you might even be able to dispense with the still camera altogether, since the still photo capabilities of camcorders have improved too. But by sticking any of these alternatives in a pocket or purse without asking a big budget. □

A handbook for doing video like a pro



If you've hesitated in making professional (i.e., commercial) video production, you'll find that *Real World Digital Video* contains a lot of good, basic information along with a ton of useful tips. Lead author, Peter Shaner, is a writer-director who also teaches movie production in California. The book is spiced with little hints and insights that sound like they are from people who've actually

gone through a few productions, so making this book is somewhat like listening to readers talk broadly about the subject.

Given that it tries to cover the entire field of video production in fewer than 500 pages (and an included DVD with video examples), it is necessarily encyclopedic in its approach. A separate book or books could be written on each of the subjects covered in its dozen chapters. But as guidance to the beginning videographer on what's important to know—or as a reminder to the more experienced of what not to forget—this is a useful volume.

That the book is aimed at commercial (or corporate) production is evident early on in Chapter 2. For example, the authors

talk about professional and consumer camcorders, but what they use as an example of the "consumer" camera is the \$1,000 Canon XL1. Right away you can see where their level of discussion is set.

Their discussion is an important technical one; a camcorder can be called "two dimensional" if it meets TV broadcasting specifications (they say why the XL1 does not). But that's not to say that the XL1 can be used for commercial video production, and this illustrates an important theme running throughout the book: the type of video you want to create will influence your choices in equipment, as well as technique.

Each chapter covers one aspect of video production, and the book is logically

arranged to roughly match the stages one would go through in an actual project. Information about equipment is in the first, pre-production and production issues are in the middle, and post production and distribution are covered at the end. Chapter 7, *Postproduction*, is geared to the business aspects of video production. It covers topics such as hiring and salary requirements for a shooting crew, equipment rental, casting, production scheduling, and overall budgets.

The overall lesson I took from the book is that equipment is important, but planning, technique, and execution are crucial. If you want to go pro, this book will be a useful guide.

—David Denata

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Streaming soon to a TV near you: video on demand

By Geoff Whelanwright

Video on demand (VoD) has been the "holy grail" on the home entertainment industry for more than a decade. Ever since cable TV companies started pumping movies into people's homes in large numbers through specialist movie channels, the threatened next step was always to allow people to have an alternative to the video store through VoD.

Instead, what most people got was PPV (pay per view)—a service that offers scheduled viewing of a variety of movies, but not one that replicates the experience of watching a video or DVD. Well, Show Cable is finally changing all of that with a true VoD service that allows you to order movies from a Web site using your cable modem-connected PC and then watch them on your TV using their digital set-top box.

The option is currently being piloted in Vancouver and Calgary—and I was one of the lucky people to be selected to test the system. It's only been two weeks, but I already have a pretty good idea about its strengths and weaknesses.

The strength of this solution is that it does mean you can get access to recently released movies—when and how you want them—and be able to control your viewing of those movies (with fast forward, rewind, and pause capabilities) from your PC or your remote control without having to go to the video store.

Within the pilot test Web site, you can select videos from four different categories: Movies, TV Series, Adult, and Music Videos. The categories look to be works in progress, but each—in turn—is broken down into sub-categories called Genres. If you look in the Genres section of the Movies category for example, you see the categorization you'd typically find in the aisles of your local video store (comedy, horror, romance, etc.).

The TV Series category, at least at the moment, consists largely of cartoons—although it is clear from the broad Genres that Show intends a lot more to

be available within this section.

The Adult section, however, is fully featured and offers no scarcity of content. It offers lists of warnings against young kids going into this section of the site (Warning: All Adult movies on Show On Demand are rated Adult [A]. Adult movies contain scenes of explicit sexuality, nudity and coarse language and are intended for adult audiences only). Yet, any child who knows your Show On Demand password and ID could pretty easily find his or her way into the adult zone.

If you have young children—or just want to ensure that no one starts displaying pornography: movies on the family TV set—you should probably log onto the secure Web site that Show offers for managing the viewing of content. This is a good idea because if someone in your house accessed an adult movie, it stays rented for 24 hours. In addition, it appears on the list of video "orders" throughout that time and can be viewed and reviewed by anyone who logs onto the Show On Demand Web page in your house.

To put the system to the test, I used Show On Demand to order an adult movie (something that called itself A Woman's Talk), allowed it to play for a couple of minutes and then tried to cancel it. It stayed on the Order list until 4 p.m. the next day. Then after pressing Cancel, it was still there—with an option to resume viewing at any point.

For many, that whole discussion will be moot. The only reason I mention it is that since the control of when you watch with Show on Demand is via your computer—and the display of the content happens on your TV—a mischievous member of your family could play havoc with us evenings' entertainment. If you were innocently watching a Disney movie with your younger children, for example, and an older member of the family decided it would be fun to shock you, they could just click and order an adult movie (if you hadn't used the secure site to block such orders), then have it displayed immediately on the TV.

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Displaying the future



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You've seen CD radios give way to cellular phones. You've busied your kitchen to the cottage and have similar plans for your VHS-video-cassette recorder because DVD is the future. Now prepare to dig a hole for your CRT—that's cathode ray tube, the posh computer monitor that graces your desktop today—because flat-panel LCDs (liquid crystal displays) are the future, at least in the near term.

These flat screens have dropped below the \$1,000 threshold in the last two years and now you can get a 15-inch LCD for under \$500. By 2005, the monitors will drop below \$300.

"This is the usual decade. This is where it will all happen. It was always predicted but never really happened.



The display will finally cross the digital chasm," Marc McConaughy, senior vice president of advanced technologies at ViewSonic, told me earlier this year as I was researching a book about future

technologies.

McConaughy believes LCD monitors will start to outsell CRT monitors in 2004. The standard LCD monitor today is 15 inches, measured horizontally.

However, they are going to get much bigger. "We believe the desktop LCD monitor will go to 30 inches. It will also get wider and will be built in a 16:19 format," predicted McConaughy.

That will allow you to truly multitask. "It will be crisp and bright and will look almost like a magazine," he said. "I also believe you will be able to flip through on-screen contents like you do in a book. So the user interface will change to accommodate that."

Display will also be multi-purpose. They won't just connect to your PC; they will act as a TV screen as well as a display for your personal computer or any device that needs to display content in a large format.

Resolution will also go up. "You will be able to display what you capture," said McConaughy.

That's not the case today. For example, images have to be reduced in size and quality to be displayed on a monitor.

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Displaying the future

Continued from page 31

That's why an image printed on paper and the same image on a screen are different sizes. Between 2006 and 2008, screens will start to have near film resolution.

The other display technology that will appear in the next five years is called OLED or Organic Light Emitting Diode. OLEDs use a carbon-based material similar in chemical composition to dyes used to colour fabric. While LCDs contain a liquid, OLED displays are more like a film, similar to the coating on a car's windshield.

OLED displays are also very thin. They are about 1/10,000th the thickness of a human hair. When electricity is applied to this substance it expands, then as it relaxes, it emits light.

When LCD screens are touched they distort because of the liquid inside them. However, OLED displays are harder and don't distort when you put your finger on them. They are also less susceptible to breakage, so manufacturers will eventually be able to create flexible displays.

In future, it will be very simple to create a roll-out display. This will be useful for handheld devices. Imagine a device that is similar to a cigar tube with a screen that rolls in and out like a blind.

"We're working with Sony to develop OLED Transluc," said Janice Mahon, vice president of technology commercialisation at Universal Display Corp. "OLED will offer visual performance of a very high end Transluc screen in a flat package."

Sony has already created a 13-inch diagonal OLED display, while Samsung has developed a 15-inch diagonal OLED screen.

Don't get out your credit card yet, however OLED displays won't likely be a retail item until 2004, the experts say.

Beyond desktops, OLED screens are highly scalable. It's foreseeable that one day we could use the displays that cover a wall.

Once manufacturers find a way to use plastic as a backplane for these displays it's feasible that they could be rolled on like wallpaper. In fact don't be surprised if, one day in the near future, you see a tractor trailer bundle down the highway with a massive OLED display on its side.

Then there's the idea of paper-like displays.

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Microsoft beefs up free audio, video

Continued from page 32

created by encoding through Windows Media Player—the free Microsoft encoding utility isn't available yet.

A few other features are worth noting, as well. Windows Media Player can now play Video CDs as well as DVDs, thanks a handy new "mini ToolBox" mode that shrinks the player and squeezes it into the taskbar, and, keeping an eye to the future, support is built in for services like pay-per-view on demand.

I'm pretty sure my RealOne player is getting nervous.

"Don't hate the media... become the media!"

—Jello Biafra

Another Microsoft media product being overhauled is Movie Maker, which came installed with Windows XP. The first release of Movie Maker was fairly new as an amateur response to Apple's popular iMovie, a single yet powerful video-editing package included with Macintosh computers. In contrast, Movie Maker was just, well, single. It

offered video capture, very basic editing (you couldn't even crossfade between video clips, for crying out loud), and could only export full-frame, digital-video AVI, Advanced Streaming Format (ASF), or Windows Media Video (WMV) files. The former obviously consumed a lot of space; the other two, while good for streaming, weren't supported by many programs other than Windows Media Player. To put it bluntly, I'm convinced that the program took up hard-disk space I could be using for something else.

Windows Movie Maker 2 (the beta version of which has been reviewed here) is a marked improvement over its predecessor. It's still not a fun, but it's usable for people who want to quickly edit videos. Though, overall, I wouldn't recommend it beyond that; there are a few surprises in there that are worth keeping an eye on.

The most striking thing about Movie Maker 2 is that the whole interface has been given an overhaul to make it resemble Windows XP, including a task-pane sidebar. This should be a good thing. It's not. First of all, the different procedures are scattered in sequence

Captain Video, Edit Video, and Finish—in if video editing has ever been a linear process. To be fair, this isn't strictly a Microsoft fault: I've complained about this in other packages as well. I was pleased that I could turn the task-pane off, but overall I found navigation between tasks to be just a little more convoluted than it needed to be.

New to Movie Maker is a collection of transitions to provide these variety in how one scene flows into the next. There's also a function for creating titles and credits with enough options and presets to cover just about any kind of video project I could think of. I rarely enjoyed that feature, because it was simple and moderately powerful in a way that I haven't seen in other editing programs. But strangely enough, there's no way to adjust the timing of the titles—or, for that matter, the transitions. If I wanted a slow fade to a new scene or a rapid-fire title sequence, I'd be out of luck.

The same problems affect the new collection of video effects. You can add effects like fading to or from black (or white), increasing and decreasing brightness, or simulating film grain with

drag-and-drop ease, you can even combine effects; but you can't control the intensity or duration of the effects. I understand that the developers want to keep the program simple, but the option should at least be there for people who want to spread their wings a little.

The biggest surprise for me was a collection of five video effects that share the same menu, and one that mislabeled it. I once shared my son when he was still crawling, and now I'm old to the point of holding the camera sideways because of the obstacle course he was navigating in the living room. I spent months trying to find an application that could rotate the image to its proper orientation, and had to settle for splitting the video into individual frames, rotating them in Photoshop, then recombining everything and exporting the new clip to the original soundtrack—a tedious task that Movie Maker has now reduced to a single click. It's because of useful ideas like that I'll be keeping an eye on Movie Maker, but for now, I'll stick with the other inexpensive tools. □

Chris Brumme (brumme@compuserve.com) is a self-declared media geek. His only rule is that you don't tolerate him too hard.



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How to find your family history online

By Christine Walenciak

Whether you are interested in doing a quick search or launching an ongoing project to trace your family history, online genealogy resources offer a wealth of options. Some genealogy sites will walk a first-time user through the process of building a family tree, while others serve as access points to genealogical data. Site databases are continually updated and easily span across countries, so what starts out as mild curiosity can easily turn into an extensive project. Some websites are free and others are subscription-based; prices depend on the amount of data and features a user wants access to and for how long.

According to a poll conducted by Nielsen NetRatings, genealogy is the most popular lifestyle category on the Internet for older adults.

Paul Muchinska, director of strategic partnerships at Genealogy.com, says that although online genealogy was initially an American hobby, it's now spread

across of Canadian interest. He attributes its success to a couple of factors.

"The Internet has allowed an explosion of genealogy research. You spend a fraction of the money to do much research because of its availability online," he said. "Also, the baby-boomer generation, now in their 50s and 60s, are stepping back and realizing that family is really what's most important."

The features offered on U.S.-based Genealogy.com are a light version of the company's software, Family Tree Maker. The secret of the online version is to get someone started in creating a simple family tree to be searched against the site's databases. The file can be saved and transferred into the offline software, where the information can be searched against a more extensive database, allowing for more in-depth research.

Tips for getting started

- Talk to family members. "Any method of genealogy starts by talking to family members," Muchinska said. "The typical problem is the lack of information

on the next generation. It is critical for people to get information while they can and preserve it while they can." He advises gathering as much information as possible from family members, then seeking an online resource to enter what data you have.

- Try before you buy. Before making a commitment to a subscription-based site, look for ones that allow you to try the service first. OneGoodFamily.com and Ancestry.com offer a seven-day free trial and Genealogy.com offers a 14-day trial period.

- Make use of census data. "Census material is the single most important source of genealogical data. It is the only database available that purports to list every single person at any given time and it's the easiest to compile because it's on the national level," Muchinska said. Canada's most recently released the 1901 census online but census records before 1901 are only available on microfiche. Other types of data, such as immigration and church records, can be found

scattered throughout the Web when using a search engine. Genealogy.com and Ancestry.com allow access to US censuses from 1790 through 1900.

- Look for sites that offer additional features. For example, MyFamily.com allows you to create your own family Web site.
- Some sites offer tutorials on how to organize your data and interview your sources. Genealogy.com's Learning Center offers five genealogy classes for the beginner. Muchinska says these are supplemental to doing an online search. "I don't think a person should be intimidated by the process," he said. "You could get started on a site, put in names that you have, but a lot of time to search and you could have instant success, without knowing anything about genealogy."
- Look for genealogy sites with message boards, which allow you to look for missing information by posting comments that people in other countries can view and respond to.

—Christine Walenciak

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Hosting service lets you claim your domain

Tired of being an anonymous Webmaster or Yahoo user? Ready to claim your own domain on the Web? SoftLayer's **Hybottling.com** (www.hybottling.com) is now offering an email hosting service. The company is aiming the entry-level service at individuals and small businesses, giving them the opportunity to set up email accounts with their own domain name. It includes 50 MB of disk space and five email accounts, and is offered at US\$2.45/month.

The company is also offering a file hosting service for US\$4.95/month. The service allows for the creation and storage of an online photo album and is meant for the less sophisticated user. The company says the service is also ideal for online auctioneers who need somewhere to house their images. No domain name is required and 500 MB disk space, one email account, and a domain or vanity domain are provided. Features include a Web Album and File Manager tool. Q

Displaying the future

Continued from page 55

The E Ink displays are about 1 mm thick, but in the lab, company scientists have demonstrated displays that are 0.5 mm thick.

Both Gyrtron Media and E Ink see their product in future e-book products. Wilson and an e-book created with the technology would weigh less than a paperback and would be five times brighter with three times the contrast of e-books shipped in 2003.

The technology also was very low power. Two AA batteries could provide 200 hours of usage—that's about 10,000 pages of reading.

In fact, color screens could be created. Flexible displays are also possible. E Ink has demonstrated flexible displays in its labs. That means that the technology will likely be available to consumers between 2005 and 2007.

In the meantime, put your CRT in the basement, save up for an LCD, and dream of displaying the future using new technologies. Q

Canadian writer Andy Walker is based in Berkeley, Calif., and runs the technology advice Web site at www.cyberworld.ca.

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Symantec reports on cyber attack trends

By Christine Walowski

According to Symantec's third Internet Security Threat Report, the level of cyber attack activity has fallen for the first time, showing a decrease of six percent in the second half of 2002. This excludes worms and blended threat activity.

However, an 81.5 percent increase was shown in the number of vulnerabilities documented since 2000.

New IT product vulnerabilities showed an increase over the past year and approximately 60 percent of the documented vulnerabilities were easily exploitable either because sophisticated

tools were widely available or because exploit tools were not required at all. Specifically, Web client vulnerabilities, such as Microsoft's Internet Explorer, increased substantially over the past year.

Blended threats, such as Klez and Bugbear—worms that multiply quickly and use multiple vectors for infection—were found to be the greatest risk to the Web, accounting for nearly 60 percent of malicious code submissions in the past six months. The company concluded that high impact, blended threats were one of the greatest future risks to the Internet. Symantec says that because post blended threats were able to suc-

cessfully exploit vulnerabilities that were known for several months, "many recently discovered vulnerabilities remain highly viable targets for future threats."

Malicious code that steals confidential information from users has increased substantially over the past year, resulting in what the company says is the potential for exposing trade secrets and sensitive financial information.

Self-replicating mass malware experienced a sharp increase in volume, with eight of the top 50 reported threats over the past six months classified as self-

replicating mass malware, compared to only one out of the top 50 during the same six-month period in 2001.

Malicious code that steals confidential information from users has increased substantially over the past year, resulting in what the company says is the potential for exposing trade secrets and sensitive financial information.

Newer technologies expected to experience an increase in usage, such as mobile devices, are considered to be future targets. Symantec says that because these devices often employ weak security measures they will appeal to malicious code writers.

Also believed to be targets are the increasing unauthorized use of instant messaging and peer-to-peer applications.

The two previous reports were released in July 2002 and January 2002.

—CanadaComputers.com

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Going mobile

TCP Lab tests high-speed wireless connections

By Sean Connolly

In our pages we've talked a lot about laptops, notebook computers, and other items designed to facilitate the mobile lifestyle. One thing that inevitably brings the road warrior crawling back down to earth is the need to connect to the Internet (and, recently, people who wanted to get connected while traveling have had to tie themselves to a land line (often using a special dial-up account that allows roaming across the continent), or suffer through slow cellular connection speeds that topped out at 144Kbps maximum.

Faster high-speed wireless data connections, via your cellular phone. The two major types of network battling it out for supremacy in the Canadian marketplace are CDMA (fascinated by Bell and Telus) and GSM (the choice of Rogers and Pulse). These companies have recently upgraded their networks and hardware to new higher speed protocols to accommodate both better voice capabilities and faster data transfer.

The CDMA networks have been upgraded to the new CDMA2000 standard, also known as 1XRTT or 1X. The GSM networks have been upgraded to accommodate the new GPRS standard. For those who care about such terms, neither of these networks represents the 3G (third generation) standard that has been talked about for years; instead, they've been dubbed 2.5G because they're roughly halfway there.

No matter which way you connect, it's

not going to be as fast as using your broadband connection from home or your corporate network.

While both networks offer a theoretical throughput of over 100Kbps, in the real world GPRS connections top out at about 56Kbps, and 1X CDMA networks realistically offer between 60 and 80Kbps. In other words, your connection will be about the same speed as a 56Kbps modem dial-up connection—a touch faster if you're lucky. It's like going back to the good old days, except you'll be able to connect from nearly anywhere, as long as you're in a digital high-speed coverage area.

That last point is important to keep in mind before you rush out to the store to buy any high-speed-capable hardware to use with your notebook or PDA, make sure you're in an area with high-speed coverage, especially if you live outside an urban centre.

The high-speed coverage areas are being expanded fairly regularly, but there are still areas that are only served by an analogue network or the older (and slower) digital networks.

Get it at the store, get on-site training!

One of the biggest problems with mobile connectivity products is actually figuring out how to make them work with your notebook or handheld. The best tip we can offer is to get it at a retail location where you can actually speak to a client representative; someone at the store should be able to take you through the steps necessary to get connected while

you're on the go. Even though most of the installation packages are pretty straightforward, it never hurts to be sure.

What do the plans entail?

One important thing to keep in mind with a high-speed data plan is that you'll have to pay extra for the data service, because it's not automatically bundled in with your voice plan. If you already have a cellular phone that you can use to connect to a high-speed network, all you'll have to spring for is the data plan (because your network access charge will already be applied to the voice account). If you're planning to use a PC Card modem with your notebook or PDA, you'll have to pay for the data plan and the network access charge. If you're also going to activate a phone number and voice capabilities on your PC Card modem, you'll have to pay for a voice plan, data plan, and network access charge.

We've included a list of high-speed wireless data plans from each of the carriers we looked at this month. Keep in mind that these plans were current at the time of writing and are subject to change without notice; special promotions may also be available, such as unlimited access for the first few months, and again these promotions are subject to change. Check the carriers' Web sites for up-to-date pricing.

Connecting with a PC Card modem

If you have a notebook, one of the easiest



and cheapest ways to connect to a wireless data network is using a PC Card solution. Canadian carrier Sierra Wireless (www.sierrawireless.com) is one of the leaders in this field, with AirCard products available for both CDMA 1X and GPRS networks. Novatel Wireless (www.novatelwireless.com) also offers PC Card products. We say "cheapest" because when you insert a PC Card, all of the electronics are hidden inside your notebook, with only the antenna portion of the card sticking out; compare that to a solution that requires an external USB adapter or a phone/cable combination and it's clearly less cumbersome. It comes at a price, however: the cards themselves typically cost \$500 or more all by themselves, and then your monthly plan will cost extra.

Setting up the software is fairly easy—
Continued on page 48

WAYS TO CONNECT



Bluetooth: A Pocket PC 10M with Bluetooth card (left) and laptop with Bluetooth adapter (right).



PC Card Modem: Palm Treo (top) and Pocket PC 10M (bottom).



Phone/Cable Link: Phone with cable and serial adapter (left) and with USB connector (right).



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Going mobile

Continued from page 46

when you buy your card from a cellular provider, it comes with setup software that installs a client onto your notebook and requires very little on the way of additional setup; most of the necessary information is already preloaded into the ROM found on a CDMA card, with a GSM card, all relevant information is set up on your SIM card.

Using a PC Card modem with a PDA isn't quite so straightforward, because most PDAs don't have a PC Card slot as standard equipment. Before going this route, you'll have to ensure your handheld supports a PC Card adapter module, typically known as a "dock." These docks slide onto the back of the unit, which often doubles the thickness of your PDA; also, because they often come with an extra rechargeable battery (PC Card modems are notorious for sucking back the battery power) they will also add to the overall weight. Instead of installing the connection software directly onto the handheld (like you would with a notebook), you will have to sync the software onto the handheld from your PC.

After you have the client software loaded onto your handheld, though, using it is a breeze. As on the notebook, the majority of the information you need to get connected is already set up on either your PC Card modem or the SIM card. One note: users of a Compaq iPaq 3600 series handheld may have problems using the Sierra Wireless AirCard 205 series PC Cards, thanks to a slight incompatibility. There is a workaround available at the Sierra Wireless Web site (www.sierrawireless.com), however.

One bonus, depending on what type of PC Card modem you choose, is that you may also be able to use the card to make and receive cellular voice calls. (This is definitely more convenient when you're using a PDA, which is only a little bigger than many current cell phones.)

You can make voice calls with a notebook, too. The only locker to make voice calls, you may also have to subscribe to a voice plan, which will cost you extra.

Connecting with a phone and cable

Though connecting your PDA or notebook to a cellular phone isn't quite as tidy as a PC Card solution, it does have

its advantages. First, if you already own a cellular phone with high-speed data capabilities, it's a heck of a lot less expensive to buy a cable and software solution than a dedicated modem (under \$150 compared to \$200 or \$400). Even if you don't already have a phone, it can still be less expensive to get the cable and the phone, as many high-speed enabled phones cost less than \$200. The added advantage is that you'll have a cell phone you can use when you don't want to haul around your notebook or PDA.

The important thing to pay attention to with this type of solution is compatibility both in terms of your phone and whether you're planning to use a notebook or PDA, because the cables are phone-specific; make sure there's a version available for your phone before you do anything else.

Also very important: some of these cable packages are available specifically for notebook computers, not PDAs, so before you buy a phone and cable, make sure your PDA is compatible.

Another downside is that while you have an active data connection, your voice capabilities will be disabled, so dial out, you will have to either disconnect

the data connection or wait until a good moment if you want to avoid interrupting your data connection. Additionally, you may be unable to receive incoming calls until you're shut down your data connection completely, so you'll have to be sure to disconnect if you're expecting a call—again, just like the old days with a dial-up modem.

When purchasing a data cable connection for your phone, remember that if you don't buy the cable from your cell phone provider, you'll probably have to phone your carrier's tech support department to get all of the settings necessary to make a data connection manually.

Connecting with a phone via Bluetooth

If you want to use a cellular phone for your mobile data connection but don't want to have to carry cables around, Bluetooth may be the answer. While we've had experiences with Bluetooth that ranged from excellent to absolutely horrendous, connecting your Bluetooth-enabled computer or handheld to the Internet using a Bluetooth-enabled high-speed-cable phone may well be

Continued on page 50

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Going mobile

Continued from page 42

the technology's killer app.

There are Bluetooth-enabled cell phones currently available from the major cell phone manufacturers, including Motorola, Nokia, Samsung, and Sony-Ericsson. This month we reviewed a Nokia 6110i phone from Rogers (www.rogers.com) and a Sony-Ericsson T610 from T-Mobile (www.t-mobile.com), and both seemed to work just fine with our portable device, other all of the configuration was completed.

It's true that there aren't currently a lot of mobile computing devices with integrated Bluetooth, but now that Palm has integrated the technology into its Tungsten line of handhelds, it's possible that the catalogue will start to grow. In the meantime, you can add Bluetooth to your notebook using a USB dongle or PC Card solution—there are a number of manufacturers offering such products, including 3Com, Belkin, DTE, Mager, and GigaByte.

This month we used the Palm Tungsten T (www.palm.com) with both in Bluetooth. We also used the GigaByte Bluetooth USB adapter (www.gigabyte.com)

with our notebook computer, and Belkin's Bluetooth FPA Adapter (www.belkin.com) on the Compaq/Presario line of our Dell Axim Pocket PC (www.dell.com).

The biggest problem with the Bluetooth products, as always, is configuring them to work with each other. In some cases it was very easy and in others we were pulling our hair out. (Start to our online archive at www.techreport.com and check out the November 2002 issue for more on Bluetooth's growing pains, and our experience testing the technology in the Test Lab.) It's important to get your phone and mobile computing device paired up properly if you want to avoid having to reconfigure the connection every time you want to hook up to the Net. A lot of time setting it up properly right off the bat will save you a lot of frustration down the road.

1x networks

1x is the shorthand name for IS-97T, which is the cryptic name given to the already cryptic CDMA2000 network, CDMA, which stands for Code Division Multiple Access, meant to have the edge

in the North American space, even while GSM/GPRS make the rest of the world. With 1x, you are billed by the amount of data you transfer, not by how long you stay connected.

Net Data to Go

from Bell Canada, www.bell.ca

Net	Unlimited 1x	1x	2x	3x	4x
Activation fee	\$10	\$10	\$10	\$10	\$10
Monthly fee	\$10	\$10	\$10	\$10	\$10
1x fee	\$10	\$10	\$10	\$10	\$10
2x fee	\$10	\$10	\$10	\$10	\$10
3x fee	\$10	\$10	\$10	\$10	\$10
4x fee	\$10	\$10	\$10	\$10	\$10

The Net Data to Go service comes in two different versions. The PC Card version features a Sierra Wireless AirCard 395 that is capable of both data and voice connections, and because it's dual-band, it works on both 800 MHz and 1.9 GHz networks. The software installation for the card was pretty painless, during the setup process the software pulled necessary data straight off of the PC Card's programming, and the rest of it was pre-programmed as Bell's version of the installer. Within a few minutes of starting the process, we were surfing the Net, both with our notebook (it's compatible with Windows 95, 98, NT, 2000, Me, and XP) and our Pocket PC (it's compatible with Windows CE 3.0, Pocket PC, and

Pocket PC 2001). The card costs \$599 with a 30-day contract or \$499 with a two-year contract. There is a \$6.95 monthly charge for network access, whether you have a data-only plan or both data and voice.

Bell also offers a startup kit for subscribers who already have a high-speed ready cell phone. The kit is available for both USB and serial connections; the USB version of the kit is compatible with Windows-based notebooks (Windows 95, Me, 2000, and XP), while the serial version also adds compatibility with Pocket PC handhelds (3.0 and higher) and Palm OS (3.3 and higher). Our installation of the kit was also reasonably easy using the serial version, though it took longer than we thought it would for the software to detect our phone. The cable was in prior USB cables for the Kocomo 2355 and the Samsung N570 ran \$100, while the serial cable for the Kyocera 2755 is \$120. There will also be USB cables available for the Audiovox 8380 and the Samsung A460 and A500 models, as well as a serial cable for the Audiovox 8300, pricing for these to be determined.

Because Bell's 1x CDMA network is

Continued on page 54

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~ HANDS ON ~

Olympus puts five megapixels in pocket camera

By David Tequila

Last year, Olympus managed to squeeze a four-megapixel sensor into a slim, dirt-pocket digital and the C-40 was born. The C-50 follows the same philosophy, this time with a five-megapixel sensor—which means images from this camera can make really big prints, or at least a standard-size print of decent clarity from a portion of the image.



Canonix C-50 Zoom

from olympus.com, www.olympus.com
retailed price: \$300

The five-megapixel sensor, very small, yet less substantial (all metal body).
Core: Low processing of TIFF images.

The C-50 isn't just a C-40 with a bigger sensor. It's a new design, more rectangular than the squarish C-40. Overall, it's quite attractive, while feeling durable, with a combination of brushed and case metal, and bright detailing on the case. It uses a sliding lens cover that also serves as a power switch, and is small enough to rest comfortably in the palm of your hand.

Just how small is it? A credit card is 8.5x5.5 cm, and this camera can almost hide behind one—it's about 13x5.5x4.2 cm (3.5x1.7x1.6 in) and 154 g (5.4 oz).

The C-50 uses a new storage medium called xD-Picture Card (formally developed by Olympus and FujiFilm, and also used in some new FujiFilm cameras). An xD card is about half the size of a SmartMedia Card, but has much greater storage potential. The C-40 ships with a 32 MB card, enough for 13 high-quality JPEG images or two uncompressed TIFFs.

The C-50 can be slipped into a jacket pocket or a handbag and carried everywhere. The exposure and menu controls are clustered on the right side on the camera back, while the shutter button and zoom lever (it has a 3x optical and 4x digital zoom) sit on top. Held in your right hand, you can use your index finger to control the zoom lever or hit the shutter button. The wrist strap loop is also on the right side.

This is primarily a point-and-shoot camera, but it offers a high level of manual control, including shutter priority, aperture priority, manual exposure settings, exposure compensation, and various flash modes. Right now Olympus has the licensing rights for the highest pixel count in the subcompact package, but that wouldn't mean much if the image quality was below par. While happy to report that images are excellent for a camera in this category, it can save images as uncompressed TIFFs at the full five-megapixel dimension (3,500x2,500 pixels) or you can select one of four JPEG settings at various image dimensions.

We compared TIFF and high-quality JPEG samples, and frankly, we wouldn't

bother with TIFF on this camera. With the supplied 32 MB memory card, you can save just two TIFF images, and it takes nearly 20 seconds for the camera to process and store each one, during which time you can't take another picture. Using the best-quality JPEG setting (S14), you can save 13 images at maximum dimension on that same card, and the camera is ready to use again in under five seconds—and image quality is, in most circumstances, indistinguishable from the uncompressed TIFFs. JPEGs at this resolution make really good-looking 8x10-inch prints from a photo printer. By saving to a smaller image dimension—1,600x1,200 pixels, for example—you can squeeze even more pictures on the card and make decent 4x6-inch prints.

Olympus has developed a technology called "Live View" that uses all the pixels in the camera's sensor to make the image, even if the camera setting calls for a smaller image size. Thus, in this case, a 1,600x1,200 image would have been processed from the full five-megapixel sensor data then downsampled, instead of just taking a 1,600x1,200 section of the sensor to make the image. Olympus claims this leads to better pictures at all sizes, although we're not convinced of any superiority here.

One thing Olympus can be commended for: access to all digital cameras is automatic USB. No special drivers required (if your computer's OS supports USB natively, of course). Simply plug the camera in and the computer sees it as a removable USB drive—dick.

The camera ships with Mac and Windows versions of Canonix Master 4.0 image software. ☐

Program to swap cell phones for food

Until the end of March, the Canadian Association of Food Banks, Peterborough, Canada, and FoodShare are asking people to donate cell phones they no longer use to the Phones for Food (www.phonesforfood.com) campaign. The program recycles old cell phones, donating them to food banks, and generates funds for food banks.

According to an annual survey of Canadian food banks, their use has doubled in the last 10 years. There are food banks in 620 Canadian communities.

Phones for Food organizers say that 800 million people around the world currently use cell phones, and users change hand sets an average of every 18 months. The team over results in the disposal of about 130 million cell phones annually—about 65,000 tons of waste in the U.S. alone. Some elements in cell phones include arsenic, lead, mercury, and nickel-cadmium from the batteries.

People can either drop-off their used cell phones at a public drop-off location or register their organization as a private

collection site. Organizations interested in participating can sign up at the Phones for Food Web site. Those who register will receive a collection kit that includes flyers, posters, and a box for collecting the phones. When the box is full it can be shipped back at no cost. Participants can continue collecting after the end of the March campaign.

The drop-off sites are meant for those who only have one or two phones to donate.

—CanadaComputers.com

Phaser 4400N simplifies network printer setup

By Dave Chappelle

If you've been considering a small laser printer for your home or small business network, the Phaser 4400 may be what you're looking for. It comes standard with parallel and USB connectivity, but several models in this series—including the 4400N model—can be connected to an Ethernet network.

Xerox has really done a good job of making this unit easy to set up and maintain. In addition to a setup and quick reference guide, networking services and warranty manuals, there is an installation chart and three-minute setup video. As well, there is an administrator's setup guide and a PDF available in nine languages on the interactive documentation CD.

We set up the printer and connected it to our network via the controls and the 5.7-in LCD on the top of the printer. During a print job the LCD indicates



Xerox Phaser 4400N
 Print Speed: 36 ppm (maximum)
 Suggested price: \$239
 ColorJet cost: \$20, \$300 (high capacity)

page completion, and warns users when the paper is running out.

As networks become more complex, system administrators seek more control over resources. Rather than connect the

4400 to the network and let the DHCP server assign an IP address, we received an assigned IP address, gateway, and subnet mask from a network sys admin. If that sounds too confusing, don't worry: there are step-by-step instructions for this on the setup disc. There are thorough instructions for almost any setup method, though, including automatic DHCP.

Included are drivers and networking instructions for using the 4400 with most flavors of Windows, Mac, Solaris, Unix, Linux, and Novell Netware.

The 4400 didn't print during normal use, so we simulated a jam with a sheet of folded paper as the input tray. To fix the jam, we only had to remove the top two pages and then the Phaser was humming along once again. When a paper jam occurs, a window opens on the source workstation, displaying a diagram of the printer with the area of the jam highlighted.

The Phaser 4400 will print at resolutions of 600 or 1,200 dpi on the usual list of media: paper, envelopes, labels, card, and transparencies.

Xerox claims an output speed of 36 pages per minute (ppm), with 11 seconds to the first page. We found that after waking and warming up, it never took longer than 13 seconds to generate the first page, and often for the 11-second mark. A 33-page PDF document

printed in 1 minute, 12 seconds. From a standing start, a 25-page PDF document completed in 1 minute, six seconds. Both were printed directly from a Web page, and across a network.

All versions of the Phaser 3300 have one-year warranties, and options extended warranties. Replacement cartridges are \$269 for standard (rated at 10,000 pages) and \$346 for high-capacity (rated for 15,000 pages) cartridges.

The many faces of the Phaser 4400

The Phaser 4400 comes in a wide range of configurations. Following is a list of models, their features, and estimated retail prices.

- Phaser 4400B: 36 ppm, 600 dpi resolution, 32 MB memory; parallel and USB connectivity; one 550-sheet letter/legal input tray; \$1,199
- Phaser 4400N: 36 ppm, 1,200 dpi, 64 MB memory; Ethernet, parallel, and USB connectivity; one 550-sheet letter/legal input tray; \$2,199
- Phaser 4400DT: 36 ppm, 1,200 dpi, 64 MB memory; Ethernet, parallel, and USB connectivity; two 550-sheet letter/legal input trays; \$2,199
- Phaser 4400DX: 36 ppm, 1,200 dpi, 64 MB memory; Ethernet, parallel, and USB connectivity; two 550-sheet letter/legal input trays, two-sided (duplex) printing; \$3,449
- Phaser 4400DX: 36 ppm, 1,200 dpi, 64 MB memory; Ethernet, parallel, and USB connectivity; two 550-sheet letter/legal input trays, two-sided (duplex) printing; hard disk, stacker, \$4,649

WWW.

TCF—If you worry that your PC may be playing host to some type of spyware (any software that covertly gathers information through a user's Internet connection without his or her knowledge, usually for advertising purposes), you can check out a utility from Lavasoft. The company's Ad-aware is a free multi-spyware utility that scans your PC's memory registry, and hard drives for known spyware components and lets you remove them safely. The software is compatible with Windows 98, 2000, NT 4.0, XP, and Mac operating systems.

www.lavasoft.com/

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 USB PEN FLASH DRIVE 256MB WITH CABLE & DRIVER, \$149
 STEREO HEADSET MICROPHONE W. NOISE CANCELLATION, \$16
 ENERMAX 300W QUIET ATX POWER SUPPLY, DUAL FANS, \$58
 COMPUTER TOOL KIT, 11 PIECES PLUS CARRYING CASE, \$14

Sun's new chief exec examines Canada's high-tech role

By Geoff Wheeler

Sun Microsystems has a high profile as a major U.S. technology company, with its development in the Java programming language and its popular line of servers. Add to that the fact that Sun has the always visible Scott McNulty as its chairman, president, and chief executive, and you have a company that gets some attention.

However, Sun is not just making inroads in the U.S. There is a stronger connection between Sun and Canada than the mere fact that McNulty enjoys playing hockey. According to Stéphane Boivin, president of Sun Microsystems of Canada, Sun is highly aware of the unique nature of the Canadian market and is making changes to tailor its Canadian operations to that uniqueness.

Boivin, an IBM veteran who has only been in the Sun Canada top job since late 2002, says the proprietary and a vibrant small-business sector are just two of the elements that make the Canadian market unique for his company. Another element of uniqueness is Sun's relationship with government agencies, which is

typified by the work the company undertook in helping to provide the technology infrastructure underpinning the Virtual Museum of Canada (www.bahmusem.ca).

The Web site is powered by three Sun servers—two Sun EnterpriseTM 430 and two Sun Enterprise 450 servers—all running Sun's Solaris Operating Environment. Meanwhile, two Ultra II servers support both images and databases. Since its debut on the Web in March 2001, the Virtual Museum of Canada has won several awards. It's well worth a look.

Boivin says many Canadians may also be unaware of the level of "Canadian content" in many high technology products. He says a significant number of Nortel products, for example, could bear a "Sun Inside" logo if Sun was to borrow a marketing trick from Intel.

He said one of the most exciting opportunities in the Canadian market has been working with Research in Motion (RIM) as that company develops corporate wireless solutions using Sun's J2ME (mobile Java) technology.

"The number of Java programmers right now is growing annually at a rate of four percent," said Boivin. "And we are seeing big growth in the use of Java in phones, PDAs, and devices such as the IBM iSeries."

He says it makes Java a strong tool to Microsoft development environments in Canada.

"If you look at a recent IDC study about the maintenance of Java applications implemented in Canada for the last four years, there is a nice balance between them," said Boivin. "It also means there are large numbers of CORBA programmers who now no longer need to retire and can transform themselves."

Canadians can take particular pride in the work of University of Calgary graduate James Gosling, who is credited with inventing Java. Boivin says Gosling has recently been working on helping develop controls for the robotic Mars lander, due to touch down on the red planet in 2009. He says controls for the robot are being based on the Java instruction set and Gosling has been "coding" the robot. □

Cross-border text messaging announced

Canadian and U.S. wireless subscribers can now exchange text messages regardless of their service providers. A new service, introduced by the Canadian Wireless Telecommunications Association (CWTa) and the Cellular Telecommunications & Internet Association (CTIA), allows users to address their text messages to a nationally 10-digit wireless phone number in Canada or the U.S.

"Canadians have overwhelmingly embraced text messaging with more than 21 million messages sent in the month of December alone—a monthly increase of 110 percent since the introduction of the Canadian intra-carrier service in April 2002," Peter Barnes, president and chief executive of CWTa and its release.

The CTIA agrees that the expansion is a result of the tremendous growth experi-

enced by wireless carriers in their domestic markets. The service will be offered by four national service providers: Bell Mobility, Microcell Solutions (Fido), Rogers AT&T Wireless, and Telus Mobility. Also included are regional carriers Allnet Mobility, Manitoba Telecom Services, and SaskTel Mobility.

North America's first inter-carrier text messaging network was launched last year by the Canada's four wireless carriers (above). Prior to the launch of this new work in 2002, wireless subscribers could only send text messages to other members of the same wireless carrier. The release of this new service means that the range has now been expanded to include U.S. subscribers as well. U.S. carriers currently participating are AT&T Wireless, Cingular Wireless, Nextel Communications, Inc., Sprint, T-Mobile, and Verizon Wireless. The

individual service providers will determine pricing and offerings for their plans, either per message or flat-rate bundles.

One example is Verizon's plan to encourage cross-border conversation. Verizon customers who sign up for 100 Messaging Verizon Wireless' short text messaging service, up until March 31, 2003 will receive unlimited text messages and alerts for US\$2.99 per month until June 30. After, customers will be allowed 160 messages for US\$2.99 per month, with any additional messages costing 25¢/6¢ received and US\$5.10 sent.

Cheats of Verizon's Canadian partner, Telus Mobility, can send text messages for \$0.10 per message, receive text messages sent from a wireless phone for free, and send up to 100 messages for \$5 per month (for the receive messages sent from a wireless phone).

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Computer recycler offers support, lessons

By David Isonline

I stress the moment you buy a new computer, a better, faster, more feature-rich device pops up on the shelves. Business owners and managers have to keep an aggressive update schedule if they don't want to be left behind. But what happens to all the old computers that are replaced with newer models? Disposal of used computer equipment can waste a lot of time, be expensive, and environmentally hazardous. In addition to the sheer volume of computer parts clogging landfills, many computers have heavy metals and toxic plastic components, and their disposal poses a dangerous environmental problem for waste-management professionals and corporate officers.

There is a much better alternative to the landfill, especially when it comes to disposing of older but still useful computer equipment. There are charitable

organizations—some of which have been featured in TCP—that recycle used-but-usable computer equipment, fixing broken parts, replacing missing ones, then redistributing fully operative computers to people in need. Supporting computer recycling provides tangible benefits to corporations who generate goodwill as the community, turns surplus computers from an environmental liability into a valuable resource for schools and public libraries, and helps young Canadians gain greater access to information technology. It can be a win-win for the company, too—lowering disposal costs and providing charitable donation receipts for tax time.

One of these organizations, Reboot Quebec (www.rebootquebec.org/), was founded by Scott Goss in January 2002. The organization operates out of a 2,500 sq. ft. warehouse space donated by the Letter B. Penion school board. In partnership with other Reboot organizations



across Canada, and with help from corporate sponsors like Microsoft, Reboot Quebec offers computing lessons and

works to put computers into schools and needy organizations in Quebec.

Continued on page 94

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Intel Pentium 4 33.5G	Intel Pentium 4 33.5G CPU	256 MB	40 GB	\$12399.99
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CRM for your small business

Email, organizer tool can help you manage customer contacts

By Geel Whelanwright

Customer relationship management (CRM) isn't the first thing that leaps to mind when small business owners let what is key to running their operations. Typically issues such as cashflow, inventory management, and acquiring sales get a much higher priority.

What is CRM and why do you need it?

But as retail business gets ever more competitive in a tough economic environment, CRM probably deserves a little more attention from the average business than it has traditionally received. Simply put, CRM is a way of coordinating all elements of a company's relationship with its customers.

It means you keep all of the information about customers in one place. When you call that customer—or they call you—you don't have to fumble about for it, or even worse, ask the customer to repeat it. CRM is all about helping you "know what you know" about your customers.

This means that if a customer calls with a query about an invoice, you can not only bring your hands on the invoice immediately, you also know what the invoice is for, when it was sent to the customer, and you have information on any quality or follow-up issues that may have arisen in the supply of goods or services—and how those issues were resolved.

Likewise, if you are going to make a sales call to a customer you haven't spoken to in a while, you should be able to quickly refresh yourself about all the information you already know before the call.

It means that instead of leaving yourself an isolated sticky note that says "Call Joe back in six months," you have a set of detailed on-screen notes attached to an automated reminder that pops up the day before you need to make the call to Joe—and gives you access to a detailed file with information about everything Joe said he needed, when he needed it, what he was prepared to pay, and what you told him at the time. You can then review that information and be



ready to make the call to Joe when you need it, you would.

CRM is for you

"Sure," I hear you saying, "that would be great, if I could afford it—but I don't have the money for an expensive CRM system from big hitters such as IBM, Oracle, PeopleSoft, Onga, or Proclix. I'll just have to make do."

All of that may be true, but making do is not such a bad thing. If you are like most small businesses, chances are you already have at least some of the technological components you need to at least start yourself with a rudimentary CRM solution.

The key to CRM is not really software—it is a function of organization and process. If you can find ways to store—and all the information you hold about a given customer—and easily pull all that information together quickly—it is not hard to maintain all the basic elements of a CRM system without buying a specific CRM solution.

Do it yourself with Office

Probably the best place to start creating your own CRM solution is Microsoft Outlook, the personal information management application that comes with Microsoft Office. Outlook not only includes a tightly integrated calendar, address book, email, note-taking, and to-do list application, it's also designed

to work well with the other applications in Microsoft Office.

This means that if, as many small businesses do, you already store invoices using Excel, create background documents for customers in Word, presentations for customers in PowerPoint—and make appointments with them using Outlook—you're already in good shape to build your own CRM solution.

One way to do it

Within Microsoft Office XP, for example, there are several standard views: Outlook Today, Jobs, Calendar, Contacts, Tasks, Notes, and Deleted Items. For the purposes of creating a modest CRM solution from within Outlook, the most important of these is the Contacts button.

If you already have contacts stored within Outlook, you'll notice that there are a number of additional "tabs" to the Contact screen over and above the standard "General" tab where all your basic information, such as phone number, address, email address, and so on is held. These additional tabs—entitled Details, Activities, Communications, and All Fields can provide you with further links to bring together customer information.

By simply moving through some of the key fields within just the first main screen, you can start building something quite useful. To start with, make sure that you not only have contact information

for each individual you deal with—but also each company. In fact, one way to start is by creating a master Company Contact record for each company you deal with. You certainly don't have to do it this way, but it can't hurt.

If, for example, you do regular business with "Joe's Company," you just create a contact record that is solely designed to hold everything about the company. It might have entries that go something like this:

Full name: Joe's Company Master Contact
Job Title: Regular Buyer of plain stationery
Company: Joe's Company
File in: Joe's Company
Address: 123 Anywhere St
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This is the mailing address (if it has)

Then fill in the fields for phone numbers, fax numbers, and insert the email address of the main person you contact at the company under E-mail. Under Display As, just put the name that will help you most easily identify the corporate contact. The Web page address and IM (Instant Messenger) Address are self-explanatory. Meanwhile, the Contacts button will allow you to add all the contacts from Joe's Company that you want to be associated with the master record. And if they fall into an existing or self-created category (a field that is used for To Do lists), you can also associate the company with that category. (An example in this case might be customers for paper—since that is primarily what defines the relationship with Joe's Company.)

Additionally, in the large, blank space above Contacts and Categories, you can insert general notes about the customer—or insert files that you want to become part of the master record of the customer. These files can be Excel files with invoices, Word files with customer quotes, PowerPoint files, and so on—anything you like.

Depending on how much information you want to store about your customer, however, it may make sense to leave that field blank and use another feature of Outlook to achieve something a little more organized—and you'll soon see

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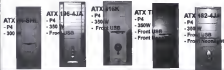
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CRM for small business

Continued from page 65

why. The top operations within a record field in Outlook are File, Edit, View, Insert, Format, Tools, Actions, and Help.

The one known as Actions is key. Like all commands in Office XP, it doesn't show you all its options when you first click on it—so make sure you move your mouse all the way down the menu list to see if there is a small arrow at the bottom. If there is, click on it and it will show you the rest of the menu list.

You'll see that from this menu, you

can create all kinds of new documents for your contact that can be associated with his or her record—including writing a New Letter to the contact, creating a new email message to them, and so on. For the purposes of this discussion, however, there are two key items I would draw your attention to: New Journal Entry for Contact and Link.

New Journal Entry for Contact allows you to enter details of any and all discussions you have had with that contact, while Link allows you to link any files created as a result of those discussions to

the contact. Both are vital if you want to keep proper track of your interactions with the company.

The final place I would draw your attention to is Activities—which will search Outlook for all the documents you have associated with the Contact—including any emails to or from the primary contact or anyone else you put in the Contacts field on the General tab of the opening Contact record screen. It will also show any To Do items that are associated with the Category to which you linked the company, as well as

journal entries and linked documents.

Lots of ways to create a solution

There are lots of different ways to create a basic CRM solution within Outlook. The things I have talked about are merely a way to expose you to the features within Outlook so you can create something for yourself. It is certainly not my intent to suggest that they are anything other than that.

But give it a try and have fun. Hopefully it will be worth it for both yourself and your customers. □

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Outlook: Cleaning house



Outlook is an annual among email and contact management programs because it stores all its data in one file. Most other programs use a series of folders and multiple

files within those folders. The downside of having all your data in one file is that it can become very large and, for any reason, you can't open it one day, all your information will be lost.

In addition, a large data file takes room in your computer's memory and ultimately slows your computer down, particularly if you use several programs at once.

For this reason, you should regularly back up your Outlook data and periodically empty old items from your data file to keep it to a manageable size.



Outlook's Archive Wizard lets you customize settings for each folder.

If you've been using Outlook for a time, you'll find you have plenty of data already stored that you no longer need to access instantly. For example, do you really need your calendar information from two weeks ago, or month-old email? If the answer is no, why not archive that information to remove it from your Outlook file.

To do this, you write the data to a special archive file before it is deleted from your Outlook data file. This way the information won't be lost and you can easily retrieve it from the archive if you need it.

Global archive settings

Archiving is a two-step process. You first specify some global settings for the archive process, then you fine tune it by specifying settings for different folders and types of data. Because of its ongoing nature, contact data is never archived so none of these settings will affect it.

To view the global archive settings choose Tools, Options, select the Other tab, then click AutoArchive. If it is not already enabled, select Archive Every *N* Days, and set the number of days to, say, 30 (you have the option of one to 99 days).

In the Default archive file area, type the name for your archive file if you

want to specify an alternate one to that indicated.

If you want to be prompted before an archive takes place, click the Prompt Before AutoArchive checkbox. When you're done, click OK.

The second step is to fine tune the AutoArchive settings for each folder. To do this, choose the folder name in the Folders list, right-click it, choose Properties, then select the AutoArchive tab. Here you can set longer periods of time than 60 days for certain items.

For example, to clean out year-old Calendar items, right-click the Calendar folder, choose Properties, then AutoArchive. Enable the Clean Out Items Older Than checkbox and set the number to 12 and the time frame to Months (you can choose Days, Weeks, or Months). The largest number you can use is 999, so you can specify a time-frame to suit any need.

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time set before items are archived, you can manually archive the folder at any time. To do this, click the folder in the Folder list to select it, choose File, then Archive.

When the dialog box appears, choose the folder you want to archive and an age for the items to be archived, based on their date. For example, you can choose to archive all items dated prior to Dec. 31, 2002 by typing the date in the dialog box or by selecting it from the calendar that

appears when you click the down arrow beside it.

You can also use Outlook's natural language interface. To archive all items that are six months or older with this method, type six months ago and Outlook will calculate which date that represents.

You can also select to archive items that have been marked Do Not AutoArchive and which cannot be archived any other way. Choose an archive file and click OK to archive the

folder you've selected.

Inside your archive file, a folder structure similar to the one you are using in Outlook is created automatically. So, if you archive a folder that appears inside your Inbox folder but choose not to archive your Inbox, the Inbox folder will be created inside your archive file as well as the folder you've chosen to archive. However, the Inbox folder won't contain any email because you haven't set Inbox items to be archived. The subfolder

you've chosen to archive will contain archived emails.

If you choose to archive a folder and the result of the archive process is that the original folder no longer contains any data, the folder will remain in your Outlook file.

It isn't possible to automatically remove an empty folder when the archive process is complete and you will need to do this manually if desired.

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Centering in on Centrino

TCP test drives Acer TravelMate 800 with Intel's new mobile-friendly technology

By Sean Carruthers

Intel has formally launched its new Centrino line of products. Unlike many other brand initiatives, Centrino isn't one specific product, but a grouping of technologies designed to work together to improve the mobile computing experience.

The first, and most notable, of these technologies is a new mobile processor, known as the Pentium M. This is teamed with the Intel 802.11b wireless chipset and the new "Calxeda" 802.11b wireless component. These three components are inter-designed and Intel-manufactured and work together to conserve power—which is key in the world of mobile computing.

As processors get faster they generate more heat, especially when they're running at full performance. With a notebook computer that's a real problem,

because the processor is installed in a confined space. In order to facilitate proper heat dissipation, the older notebook design has to increase in size. Over the last year, that has led to a gradual increase of the size and weight of the highest-performance notebook computers, users who wanted a slim and light notebook often had to settle for slower or older technology.

The power spec of the Pentium M processor is lower than the mobile Pentium 4 processor, though, and that has more than one immediate result. First, the processor generates much less heat, which allows for a much thinner case design. Second, the lower power requirement means much longer battery life—up to eight hours with certain configurations (these with smaller screens, notably).

The lower power requirement is also good news for those interested in wire-

less networking, because wireless cards tend to use a lot of power as well. By conserving power in other parts of the machine, you can still use wireless without having to worry as much about the battery life.

Currently, the Calxeda wireless module supports 802.11b wireless networking, but a dual-mode 802.11a/b option is expected later in 2003.

As with the other parts of the Centrino package, Calxeda is also designed for power efficiency. One method it uses for conserving power is in the polling.

Even when you're not connected to a wireless network, your wireless component polls regularly for available network. Calxeda saves battery power by polling less and less frequently whenever it discovers that there are no wireless networks available.

Or, actually a fairly logical assumption

too: If you leave an office building where wireless is prevalent there's a pretty good probability that you're heading off into the world at large, where wireless networks aren't as common. In the end, less polling means less radio transmission, which means less power expended.)

Though it doesn't have much effect on the battery life, another interesting feature of the Calxeda component is that it can signal-to-noise instead of raw signal strength as the criteria for switching between access points as you move around in an area with multiple wireless nodes. A lower strength signal may actually provide more clarity than one that is coming in strong, and the wireless component here is smart enough to select the wireless node that is providing the best connectivity.

While getting ready to launch Centrino, Intel has worked with a man-

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ber of ISPs and businesses to ensure that there will be a number of Centrino-ready "hot spots" where users can go for wireless connectivity.



Acer TravelMate 400

From Acer America Corp., www.acer.ca

Model: TM400
 Intel® Pentium® M Processor 760
 1.86GHz (1.86GHz)
 256

Intel has worked with ISPs to ensure that the laptops not only support 802.11b but VPN (Virtual Private Networking) and other things a business user needs. Intel has also been working

with both VeriSign and Checkpoint to ensure VPN security for users of Centrino.

We had the opportunity to get a sneak peek of one Centrino-based notebook from Acer, but keep your eyes on this space over the upcoming months: notebooks equipped with Centrino technology onboard are expected from many other vendors, including Dell, Fujitsu, IBM, MDG, and Toshiba.

We get a first look at Acer's new Centrino-based TravelMate model, the TM400. It comes in at least three different flavors at the time of launch, we get our mitts on the TM400LC, which uses the 1.6-GHz Pentium M, comes with 512 MB of onboard memory, a 60 GB hard drive, and a 15-inch TFT screen capable of 1,400x1,050 screen resolution. That resolution is delivered by XTi's 64 MB M9 mobile graphics processor, which is also capable of handling a second independent monitor.

All models of the TM400 come with integrated 802.11b wireless networking, in addition to 802.90 Ethernet and a 56 Kbps v90 modem. The chassis is only 3.175 cm (1.25 in.) thick with the screen

closed, but the TM400 still manages to fit a DVD/CD-RW combo drive inside, as well as four USB 2.0 ports and a FireWire port. There's only one PC Card slot onboard, but there's a SmartCard slot underneath it, for added functionality. The screen we tested weighs in at only 2.5 kg (5.5 lb).

One nice feature about the TM400 is that the DVD/CD ROM combo drive comes in a hotswap-enabled bay just remove it and replace it while your TravelMate is still running. Through the battery life on this model is already pretty impressive (4 hours, 35 minutes), a second battery in this bay boosts your runtime even longer.

The industrial design of the notebook strikes a nice balance between style and functionality. It's very sleek and attractive. The keyboard component looks quite nice, especially with its gently curving key layout, which also makes it easier to use in tight spaces, allowing your elbows to fall naturally beside your wrist without straining your wrist.

Acer is so confident in the quality of these new notebooks and the Centrino advantage that it's putting its money

where its mouth is: each model in the TravelMate 400 series comes with a three-year warranty, instead of the usual one year.

As for the performance, we wrote very impressed. On MedaOne.com's PCMark 2000 benchmark, it scored very well on both CPU and memory testing (5,274 CPU and 4,967 memory), which is actually very good when you consider that our 3.06 GHz Pentium 4 desktop machine only scored 7,122 and 7,149, respectively.

Likewise, the MobileMark 2002 rating the unit achieved was substantially higher than that of the other notebook machines we've seen, even those running Pentium 4 processors of a similar speed.

Other versions of the TM400 include:

- TM400LC 1.3 GHz Pentium M, 256 MB RAM, 30 GB hard drive, DVD/CD-RW, 14.5-inch TFT screen, 2.45 kg (5.4 lb), \$2,379
- TM400LC 1.3 GHz Pentium M, 256 MB RAM, 40 GB hard drive, DVD/CD-RW, 15-inch TFT screen, 2.43 kg (5.4 lb), \$2,399

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Apple goes on hardware upgrade spree



Apple has been on a bit of a spree lately, with three major product introductions in three weeks. First it unveiled new Power Mac G4 towers and a new Cinema Display in late January; the follow-

ing week brought new iMac and a price cut for iMac, and then new iGlasses and the Xserve RAID were introduced Feb. 13.

The only products left to be upgraded this year are the iPod and the iPod— which we expect will happen in March for the iPod, and sometime closer to summer for the iPods.

New Power Macs

They just can't seem to make up their

minds in Cupertino. In 2000, the two top models in this line were powered by dual G4 processors, while there was only one dual-processor model in the next few generations of the Power Mac G4 lineup. In the most recent generation, the entire line had dual processors, which we had assumed would now be the status quo. However, the latest speed bump was the re-introduction of a single-processor model to the line—which is very disappointing, but at least includes a price drop.

The new lineup, which includes price reductions of between \$300 and \$800, includes a single 1 GHz G4 processor model, dual 1.25 GHz G4s, and top of the line dual 1.42 GHz G4 model. The base model now costs \$2,399, down \$300 and includes the same RAM and hard disk as the previous low-end model—minus the processor. A single 1 GHz versus a dual



867 MHz will be slower running Mac OS X almost every time. For audio or video work it will be much slower, and for most other tasks the single processor will bog down sooner than the dual. The single 1 GHz would be a bit faster under Mac OS 9, but these new G4s are the first towers that will only run OS X, which makes the switch back to a single CPU all the more strange.

The dual 1.25 GHz and 1.42 GHz models don't include many surprises. The SuperDrive is gone from the 3.25 GHz model, but the price is \$3,199—down \$700 from the previous mid-line configuration. The dual 1.42 GHz still includes the SuperDrive, and its price is \$4,299—down \$800 from the former top-of-the-line model.

All three of the new models include an 800 Mbps FireWire port, and an Bluetooth and AirPort Extreme radio. Here is a full breakdown of the new specs and prices: \$2,399 gets a single 1 GHz G4, 1 MB Level-3 cache, 256 MB RAM, 80 GB hard

drive, Combo drive, and a 64 MB GeForce 4MX. Notable changes here are the increase to 64 MB VRAM. For \$3,199 you can buy a dual 1.25 GHz model with 1 MB Level-3 cache for each processor, 256 MB RAM, 80 GB hard drive, Combo drive, and a 64 MB Radeon 9000 Pro. The only change here is the omission of the SuperDrive, plus the old dual 1.25 GHz had a MB cache per CPU. However the old dual 1.25 GHz cost \$5,299, so we'll call it a fair trade. On the high end, \$4,999 buys a dual 1.42 GHz G4 tower with 2 MB Level-3 cache per CPU, 512 MB RAM, 120 GB hard drive, SuperDrive, and a 64 MB Radeon 9000 Pro. Other than the speed boost and FireWire 800, this is almost the same machine as the previous high end, but with a price cut.

Overall, the latest G4 tower lineup is solid, and represents good value for the professional market. The extra grunt in the mid-end model will help with video compression and graphics work, and the dual 1.42 GHz is the best value Apple has offered in a long time.

New Cinema Displays

At the same time it updates its G4 towers, Apple has introduced new Pro monitors. The 17-inch Studio Display and 23-inch Cinema HD Display both survived the transition, but the 15-inch Studio Display and 22-inch Cinema Display did not. Replacing the 22-inch Cinema Display is a new 20-inch model that sports a slightly higher resolution and a brighter screen in a swivel display. The new model has a max-

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Annex 10

Continued from page 79

20 percent faster, plus for DVD use the drive will burn twice as fast, which should yield a full DVD in 25 minutes (after encoding).

For home users who still need to boot to DOS 9 occasionally (and not just Classic), the 15-inch iMac is a good value, but you'll be missing out on the new technologies such as AirPort Extreme and DDR RAM. On the plus side, PC333 RAM is available for half the cost, and Bluetooth can still be added externally with a USB adapter.

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Apple has also taken the shears to the price of its iMac line—but without updating any specs. This means iMacs will still be able to boot to OS 9, which was probably necessary to accommodate educational users, many of whom have not yet switched to OS X. The iMac was after all created for education first and home use second.

The 700 MHz eMac now sells for \$1,549 and the 800 MHz model with SuperDrive

hills for \$1,899. It's amazing to see a SuperDrive-equipped G4 Mac for under \$2,000. It wasn't long ago that SuperDrives were only available in \$3,000-plus systems. However, considering there has been no improvement in this line's specs, it might be wise to consider an iMac if you can afford it. The 860 MHz iMac and iMac are about the price, but the latter comes with an LCD screen. Unless you need a SuperDrive for burning iDVDs, the 860 MHz iMac is probably the best value in the consumer desktop line at this point in time.

Therapy updated. Therapy 2.500 deleted

The Xserve was the first Mac to feature a 160-MHz bus speed and GDDR RAM, but the introduction of FireWire 800 and 3.4-GHz CPUs to the Power Mac line, it was only a matter of time before the Xserve was updated. The 3.4-GHz 4U runs a bit too hot to be used in the 1U III enclosure, so the new Xserve models are available with either a single or dual 3.33-GHz 64-chips, each with 2 MB of Level 3 cache. Each Xserve unit can hold up to 2 GB of DR2700 RAM and can use two 100-

68. hard drives

The standard configurations are as follows: \$4,299 for a single 1.33 GHz G4, 2 MB Level-3 cache, 256 MB RAM (DDR2700), 60 GB hard drive, two 30/100/1000 Ethernet ports, dual-load CD-ROM drive, and 32 MB ATI card. The dual-processor Xserve sells for \$5,899 and includes all the same specs but boosts the RAM to 4 GB.

All Xserve units include an unlimited client license of Mac OS X 10.2 Server, and can be configured to order with any combination of drives and expansion cards. An OS X-powered Xserve is perfect as a mail, file, and web server for small to medium size companies. Larger companies would probably require several Xserves in a cluster, which is also an option.

Apple is trying to position the XServe as a replacement for a Windows 2000 or Linux server, but with the ease of use of the Mac OS interface. So far, the XServe has seen moderate success, although it will probably never have the sales success of cheaper Windows 2000 boxes by Dell or Hewlett-Packard. The XServe is ideal for a small platform office or features build-

support for Linux, Windows, and Mac file sharing, as well as all the standard TOFOP services, including FTP, Web DAV, POP, IMAP, DNS, and DHCP services.

One new option for the iServe is the iServe R410 product, something Apple



built and sold when the first Xserve was announced, but which is only now available. The Xserve RAID holds up to 14 drives in a RAID level 0, 1, 2, 5, or 6+1 configuration, with up to 25-2 terabytes of data. The Xserve RAID includes dual hardware RAID controllers with two 128-MB caches and is capable of transfer rates up to 400 Mbps over Fibre channel Ethernet—which is eight times faster than the fastest of a single FibreWire interface. Contact your local authorized reseller for more information. The Xserve has so many different configurations that each customer really needs to build their own system. ☐

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Hardware compatibility homework can pay off

By Erika Townsend

"You're a snitch! You're a snitch! Acha-ka-ka!" These were the muted words of my good buddy, former roommate, and Mac guru Marc after I confirmed that I was indeed replacing my Toshiba Satellite Pro with a super cool MacBook iBook.

I chuckled at his words—not just because I imagined him rubbing his hands and cackling with glee, but because I remembered it a decade earlier, when we were two of three students sharing an apartment. There were five computers between the three of us back then: two Amigas, a 486 running Windows 3.1, and two Macs. A regular challenge was shuffling data back and forth, or even figuring out how to use hardware between the different platforms.

There was also his choice of words. He was of course referring to Apple's "Switch" campaign, with its TV, print, and online ads featuring real people who have decided to dump their Windows machines and embrace the Macintosh side of the fence.

However, if you pay close attention to the ads, they largely talk about the easy stuff—being able to work with Microsoft Office documents, using iTunes, using a digital camera. But if you've accumulated all kinds of hardware and software over the years and want to minimize new purchases—or if you still need a PC and want the com-

I've got boxes full of software and hardware, gigabytes of data... The ultimate goal is to be able to work with anything using one of my PCs or the iBook with few headaches—or, preferably, none.

puter to work together—forget it. No one mentions the tough stuff, because it doesn't make for good advertising copy. Apple's Web site does have a FAQ on making the switch, but it also glosses over some of the nitty-gritty questions.

In case you haven't guessed, I'm one of those people I've got boxes full of software and hardware, gigabytes of data, and any number of projects to regularly attend to, and now I have to find a way to make it all work with a Mac. The ultimate goal is to be able to work with anything using one of my PCs or the iBook with few headaches—or, preferably, none.

It's a return to those crazy student days, but on a grander scale (and maybe a few less inner monologues). Over the next few months I'll be combining what I've learned from Internet resources, vendors, and, of course, my varied Mac-adjacent friends to provide a guide to making the switch as painless as possible. Stick around; it'll be a bumpy but educational ride.



Swinging both ways

The first question on my mind—and on the minds of PC users I polled—was "Which PC hardware can I reuse?"

That used to be a harder question to answer. Even in the old days, PCs and Macs could share a reasonable amount of equipment—monitors, printers, and SCSI devices were the most common—provided you had the right adapter cables and/or software. The advent of USB and FireWire has done away with a lot of the physical restrictions, but there are still some users to keep in mind. There are also some pleasant surprises.

Hard drives and RAM

It used to be that the delineation was clear: Macs used SCSI drives, and did a tiny minority of PC users. For the most part, the PC world used NTFM, ELL, and later ATA (IDE) drives. If you have some unused ATA drives lying around, rejoice: you can happily pop them into a Mac and reformat them. Similarly, Macs now use the same DDR SDRAM and SO-DIMM modules as PCs.

PCI, AGP, and PCMCIA cards

This can be a little tricky. Desktop Macs now have PCI and AGP slots, and PowerBooks have PCMCIA slots, but that doesn't mean that every card made for a PC desktop or laptop will work. Verify with the manufacturer that drivers exist for your card first.

Monitors

Aside from the all-in-one iMac and eMac models, all Macs use the Apple Display Connector (ADC) to connect to Apple monitors. There are options if you have a monitor yield either not part with, though DVI and VGA connectors are standard or available for a little extra, depending on the Mac model. Either way, it's not a big issue.

Printers

In a perfect world, any USB printer would work on a Macintosh, provided a driver was available. In many cases that's true, though some vendors are still catching up when it comes to creating drivers for Mac OS X. But if you were to take a look at Hewlett-Packard's Web page, you'd find one or two USB printers that aren't considered Mac-compatible at all. Be sure to do your homework beforehand.

Keyboards and mice

There was a time when, between home and work, I would switch between a Macintosh, one of two PCs, and an Amiga several times throughout the day.

Continued on page 50

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Product Features

Discussion

- **Network access:** <http://www.ietf.org>, <http://www.ietf.org>
- **Network Manager:** <http://www.nm.org>, <http://www.nm.org>

Windows 95, 80

- **Support Data Survey Analysis**

【参考文献】

- Symptomatic stages usually depend on time, host-parasite
- Immunological responses influence
- Host-parasite interactions depend on each system

Wiederholungen

- Most are great! The scientific Method, Feedback
- Three issues: *Education, Technology, and Group* or *Management*

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

- Secure backup process/data security
- Access control through physical security
- Continuous scanning, virus scanning, anti-spam, anti-malware, content filtering, etc.

Application Disclaimers



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for more details

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Contribute for Webmasters with control issues

By Gary Townsend

In never been a big fan of referring to software or hardware as "solutions"—it carries a whiff of marketing-speak that I'm not comfortable with, as if I spend my days fa'mousing my horse with concern until the right company comes along with the answer to all my problems.

Little Frustrations

And so, Macromedia came along with—I admit it—a solution. The idea behind Contribute is that it lets Webmasters hand off content updates to others, freeing them up to actually take care of their administrative chores.

It sounds crazy, I know. To a control-freak like me (like, uh, me), the idea of giving someone else the keys to the castle seems like lunacy, a sure recipe for disaster. Contributor's designs seem to realize this, which may explain why the publicity for this product lavishes readers with assurances that the application won't mess around with underlying source code, and that a site administrator can control what is maintained and how.

First, the Webmaster fills in some basic server and password information for the site. Then he or she restricts access to specific folders—including the all-important ability to delete files within those folders—on a group-by-group basis. (By default, there are two groups: Administrators and Users. Custom groups can be created, each with its own permissions.)

Aside from deciding who can play with what, another concern is code integrity. For many years, Macromedia's claim to fame with Dreamweaver has been that someone can edit a page visually without the original code being disturbed, in direct opposition to Microsoft FrontPage. The tradition is carried on here, with Contributor guaranteeing to

Contributors

For Windows NT3.5/NT4.0 and up (Mac OS 8 remote available later in 2003)
 500MB video RAM

But as it turns out, I recently had been borrowing my know-how (admittedly moderate) despite I maintain a handful of Web sites, one of which relies heavily on content from other people. For the most part, updates to the site don't need to be handled by me, except when the contributors don't know or care to work with HTML. Since I'd rather be working on code than pouring text into its HTML container, the situation can get

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most inserting extraneous code. Furthermore, among the administrative settings are controls for how new content will be inserted—using CSS tags or not, allowing multiple spaces, the type of line breaks, and even size limits for graphics. Also, these can be different from one group to another.

Once all of this is in place, the site can be modified visually through the Contribute interface as easily as in any word processing program. Text can be edited, graphics moved and positioned, and tables inserted, removed, or edited. A nice touch is the ability to drag and drop Word and Excel documents onto a page. When I tried this feature, Contribute inserted text from Word flawlessly, preserving my headings, italics, hyperlinks, and graphics while ignoring the original column definitions.

Excel spreadsheets became tables as expected, but I'd have appreciated the option to select a specific range rather than having everything appear. (I could have used cut and paste, but it would have been nice to be able to do this without having Contribute.)

Once the changes have been completed, the page can be published to the server, or saved as a draft. Another nice touch: the draft page can be emailed to collaborators (including, no doubt, a nervous Webmaster) for approval before publishing.

After trying all these features, I decided

to see how good a job Contribute did at leaving my original code unaltered. Sure enough, the original structure was left intact—mostly. The position of some tags was altered, though not their order (for example, a <div> tag was moved from the beginning of one line to the end of the one above it); <td> tags with some inline CSS code were added for new lines of text that I'd entered, and while my code remained indented, it went from increments of three spaces to two. In the absolute scheme of things that's no big deal, but because I use site-wide search and replace for redesigns and large-scale updates, it's a cause for concern.

Although my motto is to avoid the first release of software like the plague, there's the occasional I.O. release that's polished enough for me to ignore that rule. Contribute can take its place among those select few titles, though it could force a change in a few weeks' time with its slight code changes. I'd also like to see two other features that would help keep administrators happy: some kind of automatic notification that a page has been changed, and a means of synchronizing changes made on the server with copies on a local drive. Either one of these would help anxious Webmasters locate their via-like grip on their precious pages. (I know it would make me less warty.) ☐

For a featured site's site can be accessed from <http://lulimade.com>.

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formatting only to the root of a document. For a Web page, this is always the `html` element. So this selector comes into play primarily when used with XML documents, as it can set the specific formatting applicable to different sub-types of XML documents (of which XHTML is one).

Proposed attribute selectors under CSS3

Name	Description
<code>element [attribute="value"]</code>	Where an element whose "attribute" value begins exactly with the string "value"
<code>element [attribute=value]</code>	Where an element whose "attribute" value ends exactly with the string "value"
<code>element [attribute~"value"]</code>	Where an element whose "attribute" value contains the substring "value"

New structural pseudo-classes

[illegible]

FROM AN EXPERTISE TABLE ROW:

trans-chloride (color white)

truth-conditional indexical

The next code snippet does exactly the same thing as the first, except that it uses numeric values instead. 'low' is the equivalent of 'low' and 'hi' is the equivalent of 'Year'.

 $\text{tratteChildTree}+1$ index_where

Journal of Management Education 36(7)

The `thick-child()` pseudo-class selector works in a similar fashion to `thick-child()` except that it counts from the last child element or element of a parent. For example, the following code snippet selects the final row of a table and colours it yellow:

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The `int_type()` pseudo-class selector operates by working with sibling elements and applies formatting based on either a numeric value or by using odd and even values. So the following code snippet could be used to alternate the position of floated tables:

```
table:nth-of-type(2n)=1 {float: right;
clear: both; margin: 0;}
```

There are two main difficulties in

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type. This allows you to do some interesting things, such as selecting to format the first and last elements on a Web page. The following example shows how you could use this to select the first and last paragraphs on a page and then set their background color to blue:

```
body > p:nth-of-type(2),p:last-of-type{
background-color: blue}
```

If you just want to select the very last child element, you can use the `last-child` pseudo-class selector. So if you wanted to selectively format the final row of a table, you could use the following code:

```
table > tr:last-child {background-color: black; color: white;}
```

There are two first of type and last-of-type pseudo property selectors, useful for selecting the first and last child elements in relation to a given parent. For example, the following code snippet selects the very first and very last table data elements in a table:

```

n>:first-of-type {background-color: black; color: white}
n>:last-of-type {background-color: white; color: black}

```

There are two 'only' types of pseudo-
Continued on page 9

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In review: Tips for Windows XP and the argument for open source

Preventative maintenance
for your Windows XP machine



Windows XP Annoyances
Authors: David A. Kay
Publisher: O'Reilly
ISBN: 0-596-00484-8
Softcover 2002 364 pages
Price: \$44.95

Like other books, this one has a...
Availability: ...
Copyright: ...

Intended for desktop/home users

The morning prior to having this book land on my desk, my Windows XP User Profile was corrupted. I tried running a CD-R and the program locked up the system to boot. I controlled off the system, and that's when a string of error messages appeared, saying that Windows XP had forgotten all of my personal settings. Ugh! So, I was hoping I'd find a solution to my problem in this book, the latest in

O'Reilly's Annoyances series. But as any good doctor will tell you, preventative medicine is cheaper than curing the disease. That's roughly the approach this book takes—a tips-and-tricks approach to improving performance and reducing the overall number of annoyances you are likely to run into.

Let's face it, Windows XP is rather like the ugly frog on the cover of this book: it is fast and you can easily keep him back to task on your machine, but few people would call it a thing of beauty. More often than not, it is the things that are supposedly designed to make things easy that end up driving most people up the wall—the cursy large icons used everywhere in Explorer, or the animated character that turns up whenever you want to search for a file. Annoying to be sure, but in addition to telling you how to customize or otherwise get rid of these specific annoyances, the book delves much deeper into the heart of the operating system, teaching you not only how to make it speedier but how to prevent annoyances you have not even encountered yet.

The book is divided into 16 chapters, looking at such things as coping with Explorer, how to use the Registry Editor and other tinkering techniques, maximizing performance, user accounts, scripting, networking, troubleshooting and—oddly enough—at the end of the book, installation. There's plenty of useful reading here. I counted over a dozen dog-eared pages in my review copy after I had finished with it, ranging from topics as simple as customizing file views to several performance tweaks, working with Remote Desktop, and plenty of good troubleshooting tips.

The author has gone to some trouble to go "under the hood," looking at how to alter the "horns" Windows XP ditches its GUI in to the list of files you can get rid of (and those you shouldn't touch) in the name of seeking better performance.

My only gripe with this book is its approach means you are less likely to turn to it when something does go seriously wrong. For example, the trouble I ran into with my User Profile was not have a simple fix, though the chapter dealing with user accounts showed me

ways to I can (hopefully) prevent it from happening again. The depth of material is substantial. It's aimed primarily at would-be power-users or sysadmins who are already comfortable with such things as editing registry entries, though to Karp's credit it shouldn't scare away a determined beginner.

It may not solve all your XP problems, but it will definitely solve a lot of its annoyances.

Tip: For a glimpse at the sort of material you can expect to find in the book, see the excellent Web site www.wrox.com.

Is open source your source for business profits?

When I read this book's title, I couldn't help but think about how often you see the business case being made for using Microsoft products in the workplace. The answer to that question is "never!" In at least, not specifically—let's face it, there is no lack of books on Microsoft software that do their best to

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Computer recycler offers support...

Continued from page 64

"The biggest challenge we face would clearly be getting quality equipment in," Scott Glass says. "It is a constant struggle to maintain a solid inventory because if they system and anything above a fairly good to us, we are always in desperate need. To date we have never completely run out of such equipment but we could always use more. Also laptops are in high demand in the non-profit community, we find it very difficult to get any particular as well."

Reboot's "win-win" philosophy provides corporations with secure solutions to data destruction and equipment removal and in turn offers community organizations the information technology and support they desperately need. Working in corporate IT roles, Glass found that most of his customers were throwing out old equipment, or donating old equipment that had been poorly formatted, missing drives and vital parts.

There were some tentative efforts made at organized computer recycling, but there was no technical support or training offered. This was clearly a great

disadvantage to those organizations who needed help most, organizations not already familiar with computers. So in addition to equipment donations, Reboot offers a network of technicians who help charities and schools set up and maintain the equipment it provides.

"I think all of us at Reboot Quebec would agree that the greatest reward in seeing our equipment being used in the community," Glass says, "There is a lot of work before equipment is ready, to be able to visit a recipient site and see a community project up and running thanks to Reboot computers is the reason we all come to work everyday."

To qualify to receive equipment from Reboot you must be a non-profit organization, charity or public educational centre. In Quebec you can apply to receive or to donate equipment by calling 514-822-1000 or e-mailing Scott Glass at sglass@rebootquebec.org.

By May 2003, Reboot Canada (now tech recovery) had redistributed more than 20,000 computers. In December 2002, Reboot Canada representatives and supporters received the Queen's Golden Jubilee Medal during a ceremony.

Computers for Schools

Computers for Schools (cfs-quebec.ca), co-founded in 1993 by Industry Canada and the Telephone Pioneers, is a similar volunteer-based computer recycling initiative launched in 1994. There are four repair centres in the Lower Mainland of British Columbia, staffed by volunteers and students.

Students need computers in order to learn the skills they will depend on to compete in the global information economy, but cash-strapped school boards often struggle to keep up with the demand for workstations. Computers for Schools assists schools by recycling computers and redistributing them fairly in the local community. Every computer provided by Computers for Schools is "classroom ready," including the operating software and basic peripherals (mouse, keyboard, and cables) needed for operation.

High schools and community who partner with Computers for Schools can also establish a computer repair centre or computer club. Repair centres and computer clubs help Computers for Schools stretch school dollars, improving the

quality and quantity of the equipment made available, and helping to build and reinforce the technological skills and knowledge that students need to make the most of their education.

Connecting Canadians

Connecting Canadians (www.connect.ca) is a federal government initiative that is designed to make Canada the most connected country in the world. Canada needs to become a world leader in the development and use of advanced information and communications technologies in order to compete globally in the information economy.

Connecting Canadians offers incentive and information exchanges, funds Canadian content initiatives, develops Canadian government information for online delivery, and formulates policies that are designed to foster stronger connections between Canadian technology initiatives. Connecting Canadians supports a variety of programs, including Computers for Schools, ScholarNet (www.scholnet.ca) and CANARIE (www.canarie.ca), Canada's Internet development organization. □

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IBM looks for new business markets for grid computing

Up until now, grid computing has been used primarily for research purposes. In an effort to push grid computing (www.ibm.com) into the business realm, IBM has released 10 new products. The products will target financial, life sciences, automotive and aerospace industries, as well as the government. IBM says the technology will increase computing power while decreasing the cost of computing.

Grid computing is a group of interconnected servers and computers that allow

processing power to be available "on tap." Through the technology, all computers and storage would be combined into a single pool of resources that individual members of the network can draw from.

IBM's focus this year will be on providing grid products for five business sectors for the target industries: research and development, engineering and design, business analytics, enterprise optimization and government development.

For the financial industry, IBM will offer the Analytics Acceleration Grid to improve

trading analytics and an IT Optimization Grid, to allow organizations to make use of underused storage and computing resources. For life sciences, IBM plans to offer an Analytics Acceleration Grid which is geared towards drug discovery and will help to increase the number of calculations processed. The Information Accessibility Grid will offer unified access to queries for the automotive and aerospace industries. IBM will provide Engineering Design and Design Collaboration grids to manage costs and

distribute work flow. For governments, IBM will provide information access grids for unified data and file access.

IBM will also offer Grid Innovation Workshops to provide enterprises with customized file filing and education on how grid computing could benefit their organization. IBM has also partnered with five companies to develop grid computing software: Platforms Computing, DataSynapse, Ansys, Entropix and United Remots.

—CanadaComputer.com

Ideazon to release customized keyboards

Ideazon's (www.ideazon.com) new Zboard pointers to "revolutionize interaction with the keyboard" and the company says it is the same time to launch its idea. According to IDC, the market for keyboards and keypads is expected to grow to US\$2.2 billion in 2004. Ideazon hopes to serve gamers, or those who use a particular application extensively, will need to purchase a customized keyboard for that specific purpose.

The Zboard is a two-piece interchangeable keyboard. The user buys the base, then purchases separate interfaces that snap into the base. Ideazon designs an application specific and incorporates customized commands and colour coding to program in shortcuts and links, which are stored on a chip embedded in the board.

The keyboard setup is meant to streamline the number of keystrokes required to perform certain operations within games

and applications. The base requires a one-time installation and the interfaces just need to be dropped into place—the base automatically detects and identifies the interface. When an interface is dropped in, a pop up window appears to confirm the launch of the application. The user also has the option of setting it to launch automatically when the interface is dropped in place. When the interface is detached the connection severs.

For gaming, macro keys are built-in to replace multiple keystrokes and keys are enlarged for ease of use. For applications, hot link buttons across the top of the keyboard can be programmed to launch files, applications or the Web page; window controls hold the bottom down for two seconds until a "sleep" is heard. Instead of a Help menu, a user activates Key Tips, which pop up to describe a key's function.

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Alan Anniversary Edition

Alan Rental

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When kids start getting up about their favorite PlayStation 2s, GameCubes and Xboxes, I like to remind them that there was a time when Alan ruled the video game universe. That's about the time they decide to start ignoring me and I can play Missile Command without interruption, thanks to Infogrames. So Alan Anniversary Edition replicates a dozen of Alan's time-tested classics in all their bloody glory. If you're not so much of a purist or are allergic to low resolution, there's a taffy up. Two color-codes verify that each game included. Not that it matters after all, the game's the thing, and those are as much like the arcade originals I have to stop myself from reaching for another quarter when a missile wipes out my last life.

Alan Rental has only three games, but a few extra features. Most of course, and Windows can be played via modem, over a LAN, or over the Internet, and offer updated versions of the games as well.

(Turning the tables and launching my own missile strike? Very cool.) It also includes the Alan VCS game Combat. The downside, there's no Mac version. The upside, each CD-ROM costs less than what I used to spend on arcades in a month.

Intellivision Live!

Intellivision Rental

www.intellivision.com

From \$29.95 each

For some die-hard Alan fanatics, Mattel's Intellivision was just an upstart platform that couldn't touch our beloved game system—not that that wasn't ironic in a couple of games of Space Shuttle when no one was looking.

Don't ask me how, but a company named Intellivision Productions got its hands on the rights to the Intellivision universe, then created by Mattel, Activision, and Imagi (that is to say, just about all of them). The end result is Intellivision Live! and Intellivision Rental for Windows and Macintosh computers, which include over 90 games between the two of them, many of which had never been previously released. Eleven of the games are available for free as part of three Intellipacks, downloadable from the site.

LEBhead

www.lebhead.org/ry/hardle/fedle/

Spreading of the LEB. It should be mentioned that in the late 1970s, long before Game Boy, Mattel dominated the handheld game market. They weren't video games in the strictest sense, but small single-game units that used LEDs to signify football plays, submarine tactics, and other game characters in simple but oddly engaging games. Programmer Peter Wronschberg has recreated 32 for Windows, Palm OS, and PocketPC. I'm sure the irony of using equipment costing hundreds or thousands of dollars to replicate \$20 handheld games isn't lost on him.

MAME

www.mamedev.com

MAME32

www.dreaming.com/mame32/

The only drawback to otherwise excellent compilations of old favorites is that they tend to stick to recognizable classics from obscure cult favorites like Quantum, Black Widow, or the aforementioned L. Robot tend to get ignored. Necessity—or at least the desire for a low-resolution aesthetic fix—being the mother of invention, many coders have taken up the challenge and found ways to make old

favorites available to nostalgic gamers.

Supporting a staggering 2,945 games, MAME is the most ambitious of all the programs mentioned here, and also the most problematic. Short for multiple arcade machine emulator, MAME is an open-source project to provide a platform for arcade games that would otherwise be extinct. MAME has been ported to Mac OS, Unix/Linux, BSD, Amiga, and even—well, some things go crazy, come on!

Here's where things get tricky: the most maintainers, MAME requires a copy of the original ROM to play a game, and like any other software, playing a game ROM you don't own without the copyright holder's consent is illegal. For a while, it was pretty easy to find and download ROMs for just about any arcade game, but they've become woefully scarce in copyright holders' crack down. Some legal ROMs are available, but they're few and far between.

MAME is made by good folk for good—do everything a nice little good deed to get something up for you. If you'd rather not deal through dots and fiddle with command line parameters then's always the Windows-only MAME32, which sports a moderately polished GUI.

Doni Tawamoni (doni@pobox.com) admits that he did see Seta in his nightmares.

Bright Orange: Intel, Between C, any machine, no need to know.

KEIT Computers

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NEW & NOTABLE

What's New

Continued from page 16

Hopefully coming soon to a bookstore shelf near your Pixel Match for Dummies. Once reasonably straightforward—as in, the more pixels, the better—the digital camera market now deals not only in pixels and megapixels, but “effective pixels,” based on the idea that newer capturing technology means not all pixels are created equal.



And now Fujifilm (www.fujifilm.ca) has gone one step further, dividing its effective pixels into 5-pixels and 8-pixels, the company's newly announced **Pixelix F700** is touted as the first consumer 6.2 megapixel digital camera, with 6.2 million effective pixels comprising 5.0 million 5-pixels, which are said to be larger and more sensitive to light, and 3.1 million 8-pixels, which the company says are smaller and less sensitive to light. According to Fujifilm, pictures captured with this camera approach the quality of film, with 2,832x2,128 (6.03) recorded pixels. Get that?

The F700 also offers on-demand continuous auto-focus, three colour modes, 38 optical zoom, manual functions, and a 1.2-second startup time, one of the fastest on the market, according to the company. It's expected to ship this May at an estimated street price of \$699.

Fujifilm has also unveiled the **Pixelix F410**, with 5.2 million effective pixels, which the company says can produce high-resolution images with 2,832x1,920 (5.4 million) recorded pixels. The estimated price is somewhat lower, at \$649, and

the camera is aimed to please the first-time digital camera owner, according to the company.



Both cameras can record video clips with sound and come with a 16 MB xD-Picture Card and connect to a PC via USB.

With up to 200-odd channels on TV these days, the CBC often sits neglected at the bottom of the heap—telling safe Canadian stories, but struggling to be heard above the din. So the company is trying a new approach, trying to get your attention while you're at your computer instead. CBC has launched **Home Delivery** (www.cbc.com/home/cbc/), a free weekly subscription service that delivers multimedia content from CBC shows like *The Fifth Estate*, *The National*, *Canada Now*, *The Nature of Things*, *Advent*, *Dispatches*, *The World This Weekend*, and *Outlook* to the desktop PC for anytime viewing.

The service uses a software client, which subscribers install, to download fresh audio, video, and text content each week while users are connected to the Internet, but not using their computers, according to CBC, since a new hurdle that has been defeated, the user is notified that it is available for viewing.

The 10-week trial runs until April 17, and a sample issue is available at the Web site. Unfortunately, the software is not Mac compatible, though Mac users can view the online archives.

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NEW & NOTABLE

What's New

Continued from page 30

While attention to detail is always important to those working with graphics, it is doubly so for those working with technical drawings such as mechanical instructions or engineering diagrams, where even slight errors could be costly or dangerous. So Camel makes a software package just for technical graphics professionals.

New available in version 10, Camel says Designer offers new Precision Snapping capabilities for better accuracy, a new Information Decoder to help users manipulate views more easily, thousands of industry-standard symbols, better compatibility and support for more than 80 import/export formats, and included Visual Basic for Applications.

The package is priced at US\$498, or US\$229 for the upgrade.

It may not be considered "push technology" by the IDC, but the same fits, nevertheless: the **Independence Gide Manual Assist Wheelchair** uses microprocessors and sensors to automatically adjust the level of power assistance to its user, making all terrain feel like it is flat and smooth, according to the manufacturer. **Independence Technology** (www.indelect.com).

Users move the wheelchair by pushing the handrims, just like on a conventional manual wheelchair. The manufacturer says that the built-in technology monitors the user's input and the chair's movement to determine the appropriate level of added power in order to provide a similar feel even when moving over grass or up ramps, and that each wheel is adjusted separately so the results are consistent even when the wheels are on two different terrains at the same time—grass and concrete, for

example, as on the edge of a sidewalk.



The chair weighs only 24.75 kg (55 lb), and is designed to fold up, making it easier to transport than fully powered chairs. The power unit fits in under the seat.

The company, a subsidiary of **Johnson & Johnson**, offers the chair through its Web site (www.indelect.com) for a retail price of US\$7,900.

If you've been dreaming of making your 30- or 40-yr-old jump off the screen, **Caligari** (www.caligari.com) wants you to pay attention. The company has released version 6.5 of its **triplicate** multimedia authoring software, and says the best thing about it is its new animation engine which allows non-linear animation using clips of motion sequences.



Other features of the software include

Continued on page 102

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• NEW & NOTABLE •

What's New

Continued from page B1

improved Inverse Kinematics, enhancements to the core modelling environment, a new surface healing tool, expanded support for the X and DXF file formats, and support for the DWG exchange file format for AutoCAD users, according to Caliban.

TrueSpace 4.5 is priced at \$945. If you shell out for the software, check out the animation competition the company is running for users—one of the judges is Ralph Guggenheim, producer of Toy Story and Toy Story 2. Further information is available on the company's Web site.

Views of flat-panel LCDs regularly dance through your head, prepare yourself for a review right. IBM has announced a new line of **ThinkVision** monitors, kicking off the party with the release of the **L2209**, a 22.1-inch model that runs at 1,800x1,200 optimum resolution. The monitor offers 260 candela per square metre brightness, 400:1 contrast ratio, and 270-degree horizontal and vertical viewing angles, according to IBM.



The device comes with a cablestereoset that allows it to swivel 125 degrees in either direction, according to the company, and offers height adjustments of up to 8 cm (3.1 in.). It offers attachments to both analogue and digital systems, with cables for both included, and with dual input, could be attached to two systems at once. The company says setup and adjustments have been made easier and more intuitive, with one-button access to frequently used functions.

But with a price of \$2,199, you might want to reconsider the sample, unmount, and relatively inexpensive sugar plums.

Type the words "Italian restaurant" into Google, and you're likely to be served a screenshot of dining choices from across the continent, most of them too far away to consider for dinner

tonight. Victoria, B.C.-based **Netminded** is trying to change that. The company, which specializes in search engine optimization, has introduced new technology that it says can extract geographical information from a Web site (the restaurant's address, for example) and code the corresponding Geographic Information Systems (GIS) data into the site's source code. This would allow search engine results to be sorted by location, thereby allowing you to include your craving for **marinara** without taking out travel insurance.

Netminded is rolling the technology out in its service packages this spring, but it will likely be a while longer before surfers on the results—there are currently no search engines poised to take advantage of the new information tags. But Richard Zivny, the company's chief executive officer, says the feedback from search engine companies has been positive.

"Based on feedback I received, I expect that the search engines will need to offer some means of factoring proximity into their search results within the year, as more and more cell phones and a capable PDA users come online and upgrade to newer devices with connectivity capabilities built in."

Just when you thought you could get away from the office, it pulls you back in, thanks to a collaborative effort between **Rogers AT&T Wireless** and **Microsoft**. A new desktop PC extension for business users will allow wireless access to all Microsoft Office applications.

Using **Microsoft's Pocket PC Phone Edition** and **Smartphone 2002** operating systems on Rogers AT&T Wireless GSM/GPRS network, this new extension will allow users to synchronize their cellular email, contacts and notes on their Rogers wireless device. They can also send, receive and view files created in Microsoft Word, Excel and PowerPoint.

The **Smartphone** allows Rogers customers to choose their method of wireless communication: voice, email, MSN Messenger or SMS. The user also has wireless access to their account in Microsoft Outlook and wireless Web access through Microsoft's Pocket Explorer Web browser.

The **Siemens S55** will be the first Pocket PC Phone Edition device from Rogers and is set for release this month.

Of course, getting away from the office is still possible. You just have to leave your phone on your desk. But don't tell them I told you that. ☺

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